

**TECHNOLOGICAL OPTIONS  
FOR CAPTURING  
AND REPORTING  
PARLIAMENTARY PROCEEDINGS**



UNITED NATIONS



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# **TECHNOLOGICAL OPTIONS FOR CAPTURING AND REPORTING PARLIAMENTARY PROCEEDINGS**

Document prepared by the United Nations Department of Economic and Social Affairs  
and the Inter-Parliamentary Union  
through the Global Centre for ICT in Parliament

## Note

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The Global Centre for ICT in Parliament is administered by the United Nations Department of Economic and Social Affairs.

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ISBN: 978-92-9142-578-5 (IPU)



This publication was made possible with the support of the Office for Promotion of Parliamentary Democracy of the European Parliament.

# FOREWORD

The advent of the Internet has increased the demand for access to the records of parliamentary proceedings in text, audio and video formats. Parliamentarians and staff, journalists and the general public now expect proceedings to be made available in a timely and accurate way. Efficient publication of parliamentary proceedings online has become an important benchmark for evaluating the openness and transparency of a parliament, as well as a tool for enabling participation in the law-making process.

The *Declaration on Parliamentary Openness*, prepared by civil society parliamentary monitoring organizations and launched at the World e-Parliament Conference 2012, calls on all parliaments to “create, maintain and publish readily accessible records of its plenary proceedings, preferably in the form of audio or video recordings, hosted online in a permanent location, as well as in the form of a written transcript or Hansard”. It also recommends that “reports of committee proceedings, including documents created and received, testimony of witnesses at public hearings, transcripts, and records of committee actions, shall promptly be made public.”

Technology nowadays offers a variety of tools and methods that parliaments can use to achieve these goals. However, as highlighted in the *World e-Parliament Report 2012*, while some parliaments have taken steps to put online accurate verbatim accounts of plenary debates and committee proceedings, a significant number have not yet developed such capabilities.

This practical handbook draws on the experiences and practices of several legislatures. It is intended to help parliaments to take informed decisions when developing their capacity to publish records of plenary and committee proceedings. It will be of particular interest to parliaments that do not yet publish their proceedings regularly or on a timely basis. It should also serve those that are looking to identify best practices and deliver better services.

Finally, it is hoped that the recommendations in the final chapter can provide useful benchmarks for the whole parliamentary community, and in doing so, help to raise the standard for parliamentary openness and transparency.



# ACKNOWLEDGMENTS

This publication was made possible thanks to the financial support provided by the Office for Promotion of Parliamentary Democracy (OPPD) of the European Parliament.

The publication benefited from the voluntary efforts of a team of parliamentary staff from around the world who worked as a virtual working group in late 2010 and 2011. It drew upon their professional expertise to offer a review of the various policy and technological options for capturing and reporting parliamentary proceedings, and share insights from their hands-on experience. They are, in alphabetical order: Miguel Eduardo Álvarez Gálvez (Guatemala), Andrea Antonello (European Parliament), Gerson Haroldo Donis González (Guatemala), Paul Dunstan (European Parliament), Sérgio Falcão (Brazil), José González Holguera (European Parliament), Carlo Marchetti (Italy), Darcy Mcpherson (Canada), Mahesh Perera (Sri Lanka), Joe Strickland (United States of America).

The establishment of the working group was an outcome of the international workshop “Technological Options for Capturing and Reporting Parliamentary Proceedings”, organized by the Office for Promotion of Parliamentary Democracy (OPPD) of the European Parliament, in partnership with the Global Centre for ICT in Parliament, and hosted by the European Parliament in July 2010.

The publication also benefited from the contribution provided by João Viegas Abreu (United Nations), Gherardo Casini (United Nations), Jeffrey Griffith, Chair of the working group (United Nations), Serge P. Kapto (United Nations), Andy Richardson (Inter-Parliamentary Union) and Dick Toornstra (European Parliament).

Special thanks are due to Ludovica Cavallari for the layout, design and graphic work done for this publication.





# EXECUTIVE SUMMARY

The use of modern technologies has significantly changed the dynamics and the methods involved in capturing and reporting parliamentary proceedings. The timely availability of these reports for members of parliament and the public has become essential for achieving greater parliamentary transparency and accountability, as well as efficiency in the law-making process.

Some parliaments are able to use technology to provide accurate verbatim accounts of plenary debates on the same day and sometimes within a few hours. However, a significant number of parliaments around the world have not yet developed such capabilities. Many of these parliaments have voiced their need for support in order to understand the technological options that are available to legislatures and to implement them in their environment. A rich base of knowledge and experience exists among the parliaments of the world and, if shared, can help all improve their capacity to capture and report proceedings and hence expand legislatures' openness and citizens' knowledge of the parliamentary process.

It is in this spirit that this handbook aims to assist parliaments that do not yet publish records of plenary and committee proceedings regularly or on a timely basis, and those that already publish records of proceedings but are looking to improve their capacity to deliver better services. To achieve these objectives, the document presents the policy issues, management considerations, and technical options involved in the primary phases of the process. The document also includes selected findings from a survey on the methods used by legislatures to prepare and publish records of their proceedings, concluded in 2011 by the Global Centre for ICT in Parliament, along with specific examples of technologies in use in parliaments drawn from presentations delivered at the international workshop *Technological Options for Capturing and Reporting Parliamentary Proceedings*, at the *World e-Parliament Conference 2010* and at the *World e-Parliament Conference 2012*.

This document is directed to Secretaries General of parliaments<sup>1</sup>, Heads of reporting offices and senior parliamentary reporters, and Heads of ICT departments and senior ICT staff as it addresses a number of policy matters and issues pertaining to both the governance and management of capturing and reporting parliamentary proceedings. The overarching questions that the handbook analyzes include: 1) what will be the official record of proceedings; 2) whether both plenary and committee proceedings will be captured and reported on; 3) what audiences will be served; 4) what forms of publication will be made available; 5) what deadlines for publication will be established; 6) whether and how challenges of multiple languages will be met; 7) what links will be made between the report of proceedings and other documents and information sources; and, 8) what resources will be made available to support the process. The handbook reviews these perspectives through the five phases of the process:

***Phase 1: Procedures and technologies for capturing members' speeches and statements and the actions undertaken during parliamentary meetings.*** There are two primary methods for capturing speeches and actions taken through ICT tools: 1) computer-assisted stenography; and, 2) audio and/or video recording, which is converted to text in a subsequent phase by direct keying or by voice-to-text dictation. Certain metadata - such as the agenda, the issues discussed, and the votes taken - should

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<sup>1</sup> The term Secretary General will be used throughout this report to represent the senior administrative official of the parliament, who may be referred to, in different legislative bodies, by various titles such as Clerk, Secretary, Director General, as well as Secretary General.

be collected and recorded during this phase. Management issues in this phase involve staff capabilities and work procedures. The skills required from staff will depend on the means chosen for capturing proceedings. In both methods, staff must be knowledgeable about the legislative process.

***Phase 2: Preparation of the initial and revised versions of the verbatim report of proceedings.***

There are three basic methods for creating the verbatim record by using ICT tools: 1) typing on a stenographic machine that produces readable text based on shorthand code; 2) typing on a PC while listening to the audio record; or, 3) listening to the audio record and then dictating into a voice-to-text system that is adapted to the reporter's voice to produce accurate text. Workflow software can play an important role in assigning and managing the recorded segments for creation, editing, and assembly into a complete record. A key policy issue in this phase is whether and what type of corrections to allow by reporters, editors, and members of parliament who delivered the speech. Staff involved in this phase must be knowledgeable about the legislative process.

***Phase 3: Processing and final preparation of reports.***

This phase includes the integration of the reports with documents considered during the session and the procedural actions undertaken during the meeting, along with metadata not previously entered. This phase calls for close cooperation among several offices within the parliamentary administration, which may be best achieved through the creation of a working group representing the different units responsible for all aspects of the capturing and reporting process. In this phase the technical options must accommodate a number of complex steps to manage the workflow and to prepare, edit, integrate, review, and store the multiple components of the final report. Some parliaments have developed their own in-house systems to meet these requirements; others have opted for commercial systems, which, however, usually need to be customized to meet the rules and procedures of each parliament. This requires that the ICT staff maintain close and regular consultation with the staff in charge of preparing and editing the reports throughout the development, implementation, and production support stages. In order to manage this phase in a more effective manner, it would be important to rely on open standards for documents, such as XML.

***Phase 4: Publication of the proceedings.***

For most parliaments this phase currently includes the production of a paper printed record, although the growth of the Internet has led many to publish also an online digital version and to provide, or consider providing, a live video stream and access to a video archive as well. The current state of the technology enables a parliament to publish a record of its proceedings in a digital format on its website at a time that it chooses. If a parliament can provide a sufficient number of trained staff to capture and transcribe members' speeches and statements, record the actions taken, and review and correct the report, several of the technical options described in this handbook would enable a parliament to provide a digital record of proceedings by the day after the meeting.

***Phase 5: Preservation of the proceedings.***

Ensuring the preservation and permanent accessibility of the record in all its published formats is also an important requirement that needs to be addressed. This requirement is complicated by the fact that the technology for preserving digital products constantly evolves. Among the most important decisions that parliaments can make with regard to this issue are to adopt open document and data standards and put in place a management team tasked with developing and overseeing procedures intended to ensure the goals of long-term access and preservation.

The information and communication technologies that can support each of these phases have continued to evolve and improve while the global marketplace has made them less costly. They have reached a point where it is reasonable to conclude that, with the necessary political will and a limited investment, most

legislatures can now have access to the technical means for capturing and reporting their proceedings to the public on a timely basis. In addition, many parliaments that already have systems in place can enhance their existing operations by adopting best practices, techniques and innovations developed by others. The review of methods presented in this document shows that parliaments have a variety of options, whether they are just beginning to set up the process or seeking to reach a new level of capability. This handbook identifies twelve recommendations for these parliaments, discussed throughout the document, that are organized around the themes of policies, management considerations, and technical options. They are intended to guide all parliaments in the area of capturing and reporting parliamentary proceedings.

### **Policies**

1. Establish written policies, consistent with the goals and values of the parliament, which are needed to guide the process of capturing and reporting parliamentary proceedings.
2. Designate the text format to be the official record of plenary proceedings. As resources permit, also make records of proceedings available in audio and/or video formats.
3. Make an official digital record of plenary proceedings available to members and the public on the parliament's website no later than the day following the meeting. If the rules of the chamber require formal approval of the record before it can be deemed official, and if such approval may not occur within a day of the meeting, then make the preliminary or unofficial record available.
4. Provide at least a text summary of all committee meetings in digital formats that allow them to be easily integrated with other parliamentary documents and information.

### **Management considerations**

5. Establish a coordinating committee in which all the organizational units responsible for producing and publishing the various versions of the record of proceedings are represented at the working level.
6. Establish a committee to ensure procedures are developed and implemented to preserve records of parliamentary proceedings.

### **Technical options**

7. Utilize workflow, content and/or document management systems to support all phases of the capturing and reporting process.
8. Capture proceedings using audio and/or stenographic systems.
9. Produce verbatim records of proceedings by transcribing audio records directly or through voice-to-text dictation software, or by using stenographic systems.
10. Develop systems that can support multiple publication formats – print and online at a minimum, and audio and video if and when resources permit – within short deadlines.
11. Develop a technical infrastructure that provides the hardware, software, networks, communication systems and users' support needed for all phases of the capturing and reporting process.
12. Use open document and data standards, such as XML, for all reports whenever possible to improve document exchange and to support preservation and permanent access.



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# Chapter 1

## OVERVIEW

### Introduction

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Parliamentary documents such as verbatim and summary reports of plenary sessions and committee meetings are fundamental records of the legislature. These documents must be prepared quickly, efficiently, and accurately, and they must be properly archived to ensure their long term availability.

The 2010 edition of the *World e-Parliament Report*<sup>2</sup> noted that timely public access to such records is a key component of a more open, transparent and accountable legislature, and therefore a cornerstone of healthy parliamentary democracies. It is one of the criteria for assessing the state of e-parliament within a legislature<sup>3</sup>.

The 2012 edition of the *World e-Parliament Report*<sup>4</sup> highlighted the progress made by parliaments since 2010 in the use of technology to achieve these goals. However, it also highlighted the difficulties experienced by some parliaments in making verbatim reports available on a timely basis. The use of modern technologies has significantly changed the dynamics and the methods involved in documenting the parliamentary process and in producing a verbatim record of debates, votes, and other actions that occur during a session. This has often resulted in greater efficiency, lower costs, and faster and wider distribution for both members and the public; it has also increased the openness and transparency of the process and therefore imbued it with greater legitimacy.

Parliaments vary, however, in their capacity to implement ICT. Some have been able to use technology to provide accurate verbatim accounts of plenary debate on the same day and sometimes within a few hours. Others offer text summaries of floor actions in near real time using sophisticated recording and transcription technology. Nevertheless, a significant number of parliaments around the world have not yet developed such capabilities and are still working to find a way to produce accurate records within an acceptable timeframe. Many of these parliaments have voiced their need for support in order to understand the technological options that are available to legislatures and to implement them in their environment.

As technology has advanced, so have options for reporting the work of parliaments. Whereas in the past reporters relied mostly on shorthand and traditional stenography machines, ICT now offers a variety of new tools and methods enabling easier production of transcripts. This has provided parliaments with the opportunity to establish a diverse set of reporting practices according to their needs and resources. The type of technology chosen by legislatures usually depends on the resources available to the parliament, both in terms of budget and human skills.

There is still, however, a lack of knowledge concerning the range of technologies being used around the world for recording and publishing parliamentary proceedings, the benefits and drawbacks of each

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2 United Nations, Inter-Parliamentary Union, *World e-Parliament Report 2010*, prepared by the Global Centre for ICT in Parliament, [New York]: United Nations, 2010. [[www.ictparliament.org/wepr2010](http://www.ictparliament.org/wepr2010)]

3 The key components of a democratic parliament are identified by the Inter-Parliamentary Union in *Parliaments and Democracy in the Twenty-First Century: a Guide to Good Practice*, [Geneva], Inter-Parliamentary Union, 2006. [[http://www.ipu.org/PDF/publications/democracy\\_en.pdf](http://www.ipu.org/PDF/publications/democracy_en.pdf)]

4 United Nations, Inter-Parliamentary Union, *World e-Parliament Report 2012*, [New York]: United Nations, 2012. [<http://www.ictparliament.org/WePReport2012>]

approach, and the most appropriate technology for meeting specific requirements. To be most useful, this knowledge needs to be based on an understanding of the differences among countries in income level, languages, political and social cultures, and parliamentary rules of procedure, and on awareness of the opportunities for parliamentary bi-lateral or multi-lateral cooperation.

## Objectives of the document

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This handbook aims to assist parliaments that do not yet publish records of plenary and committee proceedings regularly or on a timely basis. It is also designed to serve those that are looking to improve their capacity to deliver a better service and to identify best practices, innovative ideas and new technologies that suit their needs. Moreover, the document intends to support legislatures in evaluating their current processes and technologies, and to highlight a few practically-oriented recommendations and guiding principles extrapolated from the direct experiences and observations of parliaments worldwide.

The document is mainly directed toward:

- Secretaries General of parliaments who are responsible for ensuring that the proceedings of their legislatures are captured and reported to both the members and the public;
- Heads of reporting offices and senior parliamentary reporters who want to understand the evolution and potential of ICT for their work and to know how to make effective use of newer technologies and methods for producing verbatim records;
- Heads of ICT departments and senior ICT staff who provide services and support to parliamentary reporting offices and who are responsible for assessing and recommending technology options.

## Structure of the document

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This handbook begins by setting out a framework for the processes involved in preparing plenary and committee reports. This includes a brief discussion of their historical role and the identification of some key policy and management issues. The subsequent sections of the document are organized around the five key activities involved in capturing, preparing, processing, publishing and preserving parliamentary proceedings:

- **Capturing** the statements of the participants in the plenary or committee meetings, e.g., Speakers, chairpersons, members, etc. as well as the outcomes of those meetings, e.g., decisions, votes, passage of bills, etc. and the associated metadata;
- **Preparing, reviewing, and editing verbatim reports** and summaries of actions taken. This activity can also include translation of the original statement into other official languages of the parliament;
- **Processing and managing the records** of meetings, including the incorporation of all metadata; integration of the verbatim report with related documents, such as the text of bills, questions, motions, etc. that were considered during the meeting; formatting for publication; and final review;
- **Publishing** the records of plenary and committee meetings in print and in digital formats and
- **Ensuring the preservation** of these records in multiple formats



Although these activities generally occur in the order listed above, some elements of each of them can occur at different times, depending on the procedures implemented and the technologies utilized by each parliament. For example, legislatures that use stenography or computer-assisted transcription (CAT) are able to capture speech and produce verbatim draft text in a single step. Those that capture an audio record of statements first must transcribe the audio into text at a subsequent stage using different technologies. Similarly, metadata such as the name of the member and the subject of his or her speech can be added at the time the speech is captured or it can be added later during a separate processing phase. Also it is to be noted that parliaments may use a combination of approaches for capturing and reporting proceedings, using them at the same time or sequentially.

Because of this potential for overlap, some of the tasks required to produce a final record of proceedings will be discussed both at the point where they may occur in the sequence of events and also in the chapter that describes the broader activity. For example, the collection and handling of some metadata will be noted in Chapter 3 on capturing proceedings and also in Chapter 5, which considers the processing of all metadata as a prelude to publication. While this may present some small amount of redundancy, it will serve the broader goals of this handbook to present a logical sequence of tasks and also to consider together all of the tasks that comprise each of the major categories of activity, regardless of when they take place.

Each of the chapters on the major activities includes a discussion, as necessary, of the policy and management issues that need to be addressed at each step of the process. These discussions will be of particular interest to those at the level of the Secretary General of the parliament and to the senior managers responsible for producing the reports.

Each chapter also includes an explanation of the technical issues for producing reports of proceedings and discusses hardware and software options. The document also includes a brief discussion of the storage and preservation of plenary and committee records in text as well as audio and video formats.

While this handbook does not endorse specific vendors or products, it does provide representative examples that are in use in some parliaments. These parts of the document will be of particular interest to ICT directors and senior managers, as well as to senior managers responsible for producing the reports.

Finally, this handbook contains information from presentations made by parliaments at international workshops and conferences, including on the hardware and software systems they use and references to related documents and websites. These will be particular interest to ICT staff, although they can be helpful to non-ICT staff as well.

## **Survey of methods for capturing and reporting parliamentary proceedings**

To better understand current practices, the Global Centre for ICT in Parliament began to develop a survey in 2010 of the methods used by parliaments to capture, prepare, process and publish records of parliamentary proceedings. The survey started in late 2010 and concluded in 2011. The questionnaire and its results are available in Annex II and IV of this handbook. Selected findings from the survey are included in the document text in a graph or table format to illustrate key points. The title of the survey was *Technological Options for Capturing and Reporting Plenary and Committee Sessions in Parliament*. Throughout the document the survey will be referred to as the “CRPCSP survey”.

Sixty-three (63) legislative assemblies participated in the CRPCSP survey. Of these, 7 bicameral parliaments answered the questionnaire as one entity due to their administrative and organizational

structure. The results of the survey, therefore, encompass a universe of 70 chambers<sup>5</sup>. An analysis of the World Bank Income Levels of the countries of the responding parliaments indicated that as a group they are substantially similar to the group all countries in the world that have parliaments, as listed by the Inter-Parliamentary Union. Because income level correlates strongly with the use of technology in parliaments<sup>6</sup>, it is reasonable to assume that these parliamentary bodies are representative of most parliaments using technology to capture proceedings. The one qualification to this statement is that relatively fewer parliaments in Low Income countries responded to the survey. This is understandable given the fact that many of these countries do not yet have automated systems for capturing and reporting their proceedings. The findings from the survey, therefore, indicate what parliaments with more advanced technical infrastructures are doing.

## Notes on the preparation of the document

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The preparation of this handbook was inspired by the outcome of the *Workshop on Technological Options for Capturing and Reporting Parliamentary Proceedings* held at the European Parliament on 14, 15 and 16 July 2010. The workshop, organized by the Office for Promotion of Parliamentary Democracy of the European Parliament in association with the Global Centre for ICT in Parliament, saw the participation of 26 delegations of legislative assemblies from various regions of the world<sup>7</sup>.

As a follow up to the meeting, the Global Centre for ICT in Parliament set up a working group of parliamentary experts who, on a voluntary basis and in their personal capacity, contributed their time and knowledge to the preparation of this handbook. Portions of the document were presented at the *World e-Parliament Conference 2010*, held in South Africa on 21 and 22 October, and comments from participants and other interested stakeholders were invited.

The handbook benefited from other presentations made during the *World e-Parliament Conferences 2010 and 2012*, as well as from additional experience reported to the Global Centre for ICT in Parliament over these years.

As with the Inter-Parliamentary Union's *Guidelines for Parliamentary Websites*<sup>8</sup>, the document is written in a manner that offers principles and ideas that may be useful to all parliaments regardless of differences in political systems, traditions, and country's income level. The handbook will need to be revised as technology evolves and as parliaments adopt new systems. The meanings of terms that vary among parliaments (e.g., Hansard versus Record) are explained in footnotes when they first appear.

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5 See Annex III for the list of responding parliaments.

6 See *World e-Parliament Report 2010 and 2012*.

7 European Parliament, Office for Promotion of Parliamentary Democracy, Report of the *Workshop on Technological Options for Capturing and Reporting Parliamentary Proceedings*, [Brussels], European parliament, 2010. [[http://www.ictparliament.org/sites/default/files/recording\\_workshop\\_report\\_july2010.pdf](http://www.ictparliament.org/sites/default/files/recording_workshop_report_july2010.pdf)]

8 Inter-Parliamentary Union, *Guidelines for Parliamentary Websites*, [Geneva]: Inter-Parliamentary Union, 2009. [[http://www.ictparliament.org/sites/default/files/webguidelines\\_en.pdf](http://www.ictparliament.org/sites/default/files/webguidelines_en.pdf)]

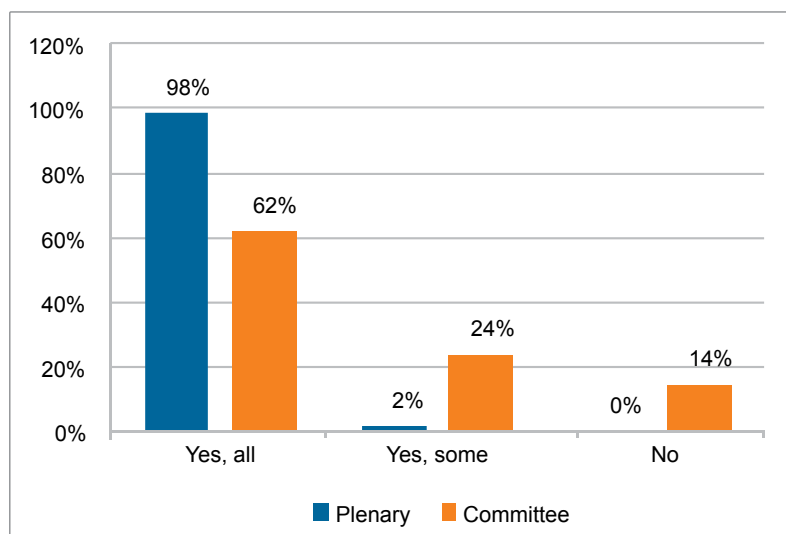
## Chapter 2

# BACKGROUND AND FRAMEWORK

### Some historical and political notes on reporting parliamentary proceedings

Most parliaments today capture some records of their plenary proceedings. Around 98 per cent of the respondents to the CRPCSP survey reported that they prepare verbatim reports of all plenary proceedings (one legislature reported that it prepares reports of some but not all proceedings). This is higher than the percentage of parliaments noted in the *World e-Parliament Report 2012* that have systems for publishing their proceedings. However, as pointed out above, the CRPCSP survey had fewer respondents from low income countries, which are most likely not to have such systems.

Figure 2.1 - Percentages of parliaments preparing verbatim records of plenary and committee proceedings



Source: Survey CRPCSP, Question 2.0A and 2.0B.

Somewhat fewer parliaments prepare verbatim reports of committee proceedings, although some that reported that they do not did say that they provide summaries of committee meetings. The role of committees within parliaments can be a factor in determining whether verbatim reports are prepared. In some parliaments, verbatim reports of only some committees are drafted and published. This may depend on the issue being considered or, for example, on the capacity in which the committees are sitting (legislative, drafting, etc.). This practice is reflected in the findings from the CRPCSP survey: 62 per cent of respondents said they publish verbatim reports of *all* committee meetings, 24 per cent said they publish reports of *some* committee meetings, and 14 per cent said they *do not* publish any reports.

It was not always the practice of parliaments to publish records of their plenary proceedings, however. As noted by the Commonwealth Hansard Reporters Forum, "*from the second half of the 16th century the British Parliament prohibited all reporting and publishing of its proceedings. The Parliament believed it should*

*deliberate in private and regarded any attempt to publicise its proceedings as a serious punishable offence.”<sup>9</sup> Nevertheless, during the 19<sup>th</sup> century practices began to change, partly in response to pressure from the public and the press. In some cases, newspapers and private companies were allowed to publish reports of debate and proceedings. The need to ensure timely, accurate, and more objective reports, however, led many parliaments to prepare and publish the reports themselves, and since the beginning of the 20<sup>th</sup> century this has generally been the case.<sup>10</sup>*

In 2012, a large group of Parliamentary Monitoring Organizations (PMOs) issued the *Declaration on Parliamentary Openness*<sup>11</sup>, a collective call to parliaments by civil society for an increased commitment to openness and to citizen engagement in parliamentary work, also aiming at improving the availability of parliamentary proceedings. In pressing for progress in making parliamentary information more transparent, the document in fact recommends that *“Parliament shall adopt policies that ensure proactive publication of parliamentary information, and shall review these policies periodically to take advantage of evolving good practices. Parliamentary information includes information about parliament’s roles and functions, and information generated throughout the legislative process, including the text of introduced legislation and amendments, votes, the parliamentary agenda and schedule, records of plenary and committee proceedings, historical information, and all other information that forms a part of the parliamentary record, such as reports created for or by parliament.”* More precisely, paragraphs 19 and 21 of the Declaration (respectively, *“Publishing Records of Committee Proceedings”* and *“Publishing Records of Plenary Proceedings”*) state that *“Reports of committee proceedings, including documents created and received, testimony of witnesses at public hearings, transcripts, and records of committee actions, shall promptly be made public”* and that *“Parliament shall create, maintain and publish readily accessible records of its plenary proceedings, preferably in the form of audio or video recordings, hosted online in a permanent location, as well as in the form of a written transcript or Hansard.”*

The political importance of reporting and making parliamentary proceedings available to the public was well expressed at the opening session of the *Workshop on Technological Options for Capturing and Reporting Parliamentary Proceedings* cited previously:

*...the essence of a parliamentary democracy is that it resolves challenges and problems, disputes and arguments by talking. Such talking, exchanging of ideas based on knowledge and political ideologies, which may take place in standing committees, delegations and plenary meetings, should not only enhance the quality of decision-making, but also allow these decisions to become understood and supported by the people represented in parliament. Parliamentary debates should be seen by citizens as reflecting their opinions, living within the society, allowing minorities to be heard and instilling a sense among the citizens that the decisions have resulted from meaningful and fully representative discussions.<sup>12</sup>*

<sup>9</sup> <http://home.vicnet.net.au/~aphea/chrf/history.html>

<sup>10</sup> The name “Hansard” comes from this practice. In 1829, a private publisher named T. C. Hansard took over an existing report of parliamentary debates and called it *Hansard’s Parliamentary Debates*. “By the late 1870s dissatisfaction with the accuracy of the report was being expressed and Parliament voted Hansard the sum of £300 a year for shorthand assistance. The Hansard family continued to produce the ‘Parliamentary debates’ until 1889. Other publishers continued to print transcripts of the debates until in 1909 the House of Commons took control of the reporting and printing of parliamentary debates. It was during the 60 years of the Hansard family’s publication that the name Hansard became synonymous with the printed debates. In 1943 the British Parliament reinstated the name Hansard in the title of its formal records.” See <http://home.vicnet.net.au/~aphea/chrf/history.html>

<sup>11</sup> See <http://www.openingparliament.org/declaration> for the Declaration on Parliamentary Openness in various languages.

<sup>12</sup> Opening statement by Hon. Rainer Wieland, Vice President of the European Parliament. *Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop*. European Parliament, Brussels, Belgium, 14-16 July 2010. <http://www.ictparliament.org/node/1535>

## The policy, governance, and management of reporting procedures

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There are a number of policy issues and questions involved in the governance and management of capturing and reporting parliamentary proceedings. Those that affect all phases of the process are noted below. Others which relate primarily to a specific stage of the process are discussed in more detail in the appropriate chapters that follow. The overarching issues and questions include:

1. What will the parliament deem to be its **official record** of proceedings? If it collects all three formats, will it be the text, the audio, or the video record, or some combination? What will be the relationship among the formats if more than one is used for capturing?
2. Will both **plenary and committee proceedings** be captured? If committee proceedings are captured, will they be complete for all committees? Will only certain committee proceedings be captured? If proceedings are not captured or not captured in full, will there be a summary report of the proceedings?
3. What **audiences** are the records of the proceedings intended to serve and which of their requirements will be met? The needs of different audiences will affect how proceedings are captured, which in turn will affect what can be done with them and how quickly. The possible groups and some of their requirements include:
  - a. **Members.** Do they prefer a text version of the proceedings? Do they also want to use audio or video clips for communicating information about themselves? How quickly do they require the proceedings to be available in text or in other formats?
  - b. **Administration.** How will the parliamentary administration use the record of proceedings in serving the institution? Which formats will it be required to publish? Which formats will it be required to preserve?
  - c. **Media.** Will they require all formats – text, audio, and video? How will these be made available to the media? Within what time frame?
  - d. **Civil society organizations.** Will the preferences of civil society organizations be taken into account? If so, how will this be done?
  - e. **Citizens.** Which means do citizens have for accessing proceedings? How widely available is the Internet? What is the degree of access to television? To radio?
  - f. **Persons with disabilities.** Which means of access will be provided for persons with disabilities?
4. What **forms of publication** will be provided? These have to be determined in advance so that the necessary methods for capturing, processing, and publishing can be implemented. The options include:
  - a. A text record in the form of a report printed in multiple copies;
  - b. A text record in the form of a report available online;
  - c. Live TV broadcasting;
  - d. Re-broadcast on TV;
  - e. Live web streaming;
  - f. On demand video streaming;
  - g. Live audio streaming;
  - h. On demand audio streaming.

5. What will be the **deadlines for publication** of the proceedings? This question has several components:
  - a. Will the deadlines be the same for all audiences?
  - b. Will the deadlines be the same for all publication formats?
  - c. If there are different versions of a report, such as preliminary and final versions, what will their deadlines be?
6. How will the challenge of **multiple languages** be addressed? Will both the spoken language(s) and their interpretation be captured?
7. What **links** will be created from the proceedings to **other documents and information sources**? For example, these could include links to voting results, documents being considered during the session and information about each speaker. Decisions about links will affect the information collected and metadata inserted both before and during the session.
8. If **video or audio** is also captured, will it be **linked to the verbatim text** of the report? This type of link is noted separately here because the means for creating such links require particular attention to information collected and metadata inserted during the session itself. It can be more difficult and time consuming to create these links after the session is over.
9. Finally, it is necessary to determine what **resources** can be made available for the capturing stage of the proceedings. Depending on the formats chosen (text, audio, and/or video) this phase is often the most expensive step of the process and requires careful analysis of the various options and methods available.

The policy decisions and the answers to these questions have to be made, or at least approved, by the highest authorities of the parliament, which will vary based on the structure and organization of the parliament. The policy issues and the possible decisions may be proposed by the senior managements. However, because they involve some of the parliament's most important goals for transparency and openness, they can only be approved by those who have the power, the authority, and the responsibility to set those goals and determine how they will be achieved. It is also the responsibility of those who make the final decisions to allocate the necessary resources for implementing them.

## *Chapter 3*

# CAPTURING PROCEEDINGS

### Introduction

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Phase I involves the initial capturing of proceedings. It includes recording, through various means, members' speeches and statements and the actions undertaken during the parliamentary meeting. It also includes the collection of some of the metadata required for the preparation of the final report, such as the name of the member speaking, the time and topic of the speech.

The primary question that needs to be addressed with regard to statements and speeches is whether to capture them directly in a text format using some type of keying technology, such as computer-assisted stenography (also referred to as computer-assisted transcription or CAT), or to capture them in an audio or video format and then convert them to text. This chapter discusses some of the advantages and disadvantages of these approaches.

The questions related to the collection of metadata during this stage include what to collect and when to collect it, how much of it can be prepared in advance, and which means will be used to capture it so that it can be integrated into the record.

### Policy Issues

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There are several policy issues to be resolved when determining how to begin capturing proceedings. In addition to their impact on this phase of the process, the decisions made will affect the later stages of managing and reporting proceedings.

The first issue to be addressed is the determination of the official record of the proceedings. While the argument can be made that, given the current state of the technology, parliaments could choose to use an audio or video format as the official record without providing a text version, such an approach cannot be fully recommended for a number of reasons. Although audio and video records are valuable, and their availability increases parliamentary openness, they do not provide yet the same capacity as a text edition to quickly scan the proceedings, locate a particular portion of the record by event or by speaker, or integrate the record with other documents and information. Moreover, whether in analog or digital formats, the long term preservation of historical records in audio and video poses more challenges than those in text.

Text, audio and/or video formats altogether do provide rich and complementary records of proceedings. If resources are limited, however, and only one format can be processed and maintained as the official record, text is still the format suggested in this handbook. Audio or video records can be used as the basis for producing the text version of proceedings, even if these formats are later discarded for technical or cost reasons.

A recommendation that the official version be text does not necessarily mean that it must be printed. Because the Internet can make documents available quickly and easily, some parliaments have considered

eliminating printed records or reducing their number. The rationale for such a step is usually that it is a cost saving measure. Some parliaments provide interim reports on their websites without printing them; these are usually replaced when the final report is published.

Access for the public also needs to be considered when deciding the format of the official record. If Internet penetration is low, relying on online access alone may reduce transparency. If, on the other hand, literacy is low, a text record of proceedings may not be as informative for citizens as audio or video broadcasts, which may be more readily available in some countries.

On balance, however, text is currently easier to use, maintain, and preserve as the official legal record and hence should be the first priority. Providing other means of access to improve transparency and accessibility should be considered after effective procedures and systems are in place to ensure a sustainable text record.

A second issue to be addressed in this phase is what rules or guidelines to establish for capturing spontaneous comments by others and other events occurring in a session when a member is speaking. Related to this are the questions of whether and how to report the reactions of others during the session (for example, outcries of agreement or disagreement with the speaker, clearly heard retorts, etc.). Typically, parliaments develop their own approach based on the history and culture of the legislative body and its rules governing debate.

Finally, another matter of importance to deal with is what metadata to collect during this initial capturing phase. This decision must be based on the choices made concerning the presentation and format of the report of proceedings, the means of access, and the linkage, if any, to audio or video records. At a minimum, the name of the speaker, the date, the time, the subject of the speech, and the procedural context need to be gathered. These elements will be required to ensure the accurate collation of the captured segments needed to prepare a complete text version and a basic index for finding statements by a specific member, by a bill number or legislative issue, etc. More metadata elements, some of which can be added at a later phase if it cannot be added during initial capture, will be needed, especially if audio or video records are to be made available, and if they are to be linked to the text.

## Management Considerations

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Senior administrators of parliament, including the Secretary General and the heads of the Reporting Department and the ICT Department, will have the responsibility for implementing the decisions made at the institutional level regarding the capturing and reporting of the proceedings. The capturing phase involves a number of management considerations – particularly concerning staffing and procedures – that affect the capacity to achieve the goals established by the parliament's leadership.

### STAFFING

Normally parliaments have a dedicated office within the institution that is responsible for capturing proceedings, although this office may rely on the support of other units to prepare a final record. The staff of this office will require different skills, depending on the method selected for the initial capturing of proceedings. If it is to be done by direct keying, staff will need a high level of expertise in computer-assisted stenography; parliaments that use this method have staff who can type as many as 200+ words per minute. These staff members will also need at least a working knowledge of legislative procedures, which can be augmented over time through experience and the guidance of supervisors.

The major staffing challenge confronting parliaments that choose a direct keying method is that, although stenographic systems have been developed for many languages, the skills required for this technique



are not widely available or easily obtainable in all countries. It is for this reason that many parliaments have chosen to capture proceedings by recording audio or video first and then produce text based on listening to these records. On the other hand, if a parliament can hire staff, directly or through contract, who have the needed skills, stenographic-based methods of capturing proceedings can allow verbatim reports to be produced very quickly, and in some cases almost in real time.

If capturing is done through audio and/or video recording, a different set of skills is required. In addition to staff who can transcribe the text of the proceedings from the audio records, there is a need for technical staff who can setup and maintain an audio and/or video recording system. Also, staff will be needed who can manage the recording process during the session, inserting metadata where required to ensure at a minimum that the time, date, and speaker are clearly identifiable on the recording. See, for example, the description of the system used by the Senate of Belgium in Box 3.1.

### **Box 3.1. Audio and metadata capture in the Senate of Belgium**

During a session, the in-room reporting team consists of one operator (1-hour shift), a chief reporter (1-hour shift) and one transcriber (5 minutes shift). All other activities related to the recording of the sessions take place outside the meeting room. The operator selects the server and channels on which to record, starts/stops the recording, inserts time codes marking the beginning and end of a speech or discussion on a subject matter, and splits the recording in takes of less than 5 minutes, allowing reporters to produce a preliminary transcription within one hour. The chief reporter assigns tasks to the transcriber and the operator, oversees the recording operations and handles elements of procedure such as votes, as well as incidents that may happen during the session. The transcriber takes notes, notably of incidents that may not be recorded, and then in his office transcribes the takes assigned to him by the chief reporter.

*Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop.* European Parliament, Brussels, Belgium, 14-16 July, 2010. pp. 8-11 <http://www.ictparliament.org/node/1535>

As with those who transcribe directly during the session using stenography, those who transcribe from a recorded audio source will need a working knowledge of legislative procedures. Some parliaments have chosen to put particular emphasis on knowledge of public policy and legislative procedures and make this a prerequisite for advancement. See, for example, the description of staffing in the Chamber of Deputies of Italy in Box 3.2.

### **Box 3.2. Staffing in the Chamber of Deputies of Italy**

The system does not require professional stenographers or reporters. Staff who will work as reporters take a training course after joining the organization. In the Chamber, all parliamentary officers are expected to be able to carry out different types of legislative activities and it is not expected that those starting out as reporters will spend their whole career in the same capacity. It is the view of the Chamber of Deputies that the reports are best prepared by people knowledgeable on parliamentary subject matters. In the first step, junior reporters (young 4th-level officers holding a first level degree in law, political sciences, economics or literature), produce a basic draft.

*Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop.* European Parliament, Brussels, Belgium, 14-16 July, 2010. p.12. <http://www.ictparliament.org/node/1535>

A further staffing consideration is the use of external contractors. Some parliaments use their own staff to capture and transcribe proceedings of plenary sessions and use contractors to produce proceedings or summaries of all or some committee meetings, usually under the direction of an office of the parliament or committee staff. The choice may be based on several factors, including whether the parliament chooses to report committee proceedings at all, the importance of the committee, the capacity in which it is sitting, or the subject of the proceeding, and the cost. While this handbook recommends that all committee meetings publish at least a summary of proceedings in order to better meet the mandate of transparency, it also recognizes that the role of committees varies among parliaments and that human and financial resources can represent a prohibitive factor. At a minimum, any verbatim or summary reports of committee proceedings should be produced in digital formats to allow them to be easily integrated with other parliamentary documents and information.

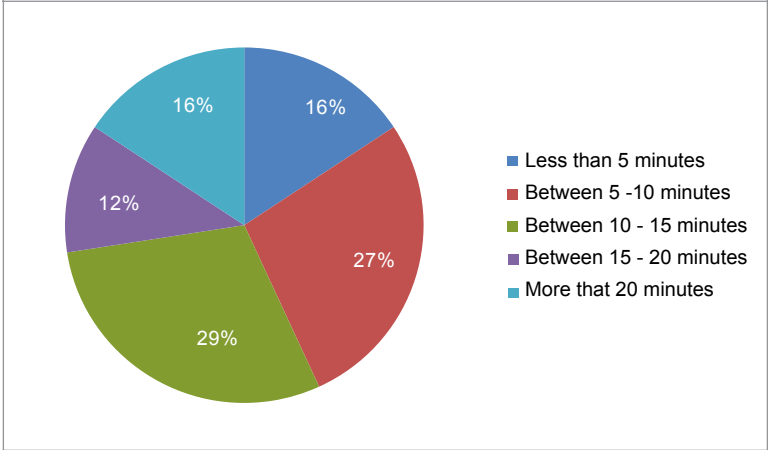
### Procedures and Processes

Several procedural questions need to be addressed during the capturing phase.

First, should the reporters who capture directly via stenography or produce a draft report via other means be present in the meeting room, and for how many consecutive minutes of proceedings should they be responsible? Most parliaments do have reporters on the floor or in the meeting room so that they can better understand what is taking place, who is speaking, and the subject matter. In some cases, especially in legislatures which must produce reports in many languages, it is not feasible to have all languages represented on the floor at the same time. Parliaments with just a few official languages, however, often are able to have reporters in the room for all languages.

The length of a segment of the proceedings that a reporter must transcribe is usually 15 minutes or less but some parliaments report that it can be as long as 30 minutes. See Figure 3.1.

Figure 3.1: Average number of consecutive minutes that a reporter/stenographer works in capturing plenary proceedings



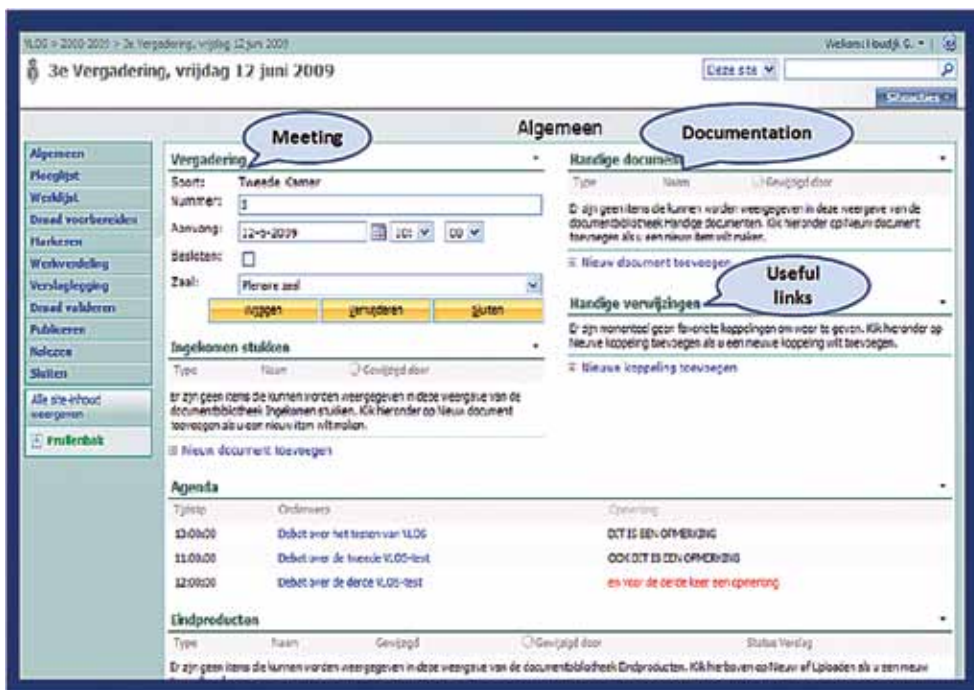
Source: Survey CRPCSP, Question 3.4.

Second, as noted above, it is important to add metadata to the record of the proceeding so that it can be managed more efficiently during later phases of transcription, editing, and publication. Metadata, such

as the date and time, speaker, subject or document being discussed, and outcome are best added at the time of capture, especially when capture is by audio or video recording. While it can be done later, this will be less efficient and more prone to error. Even capture through stenography needs to include these data elements so that the transcription is understandable.

The capture of metadata can usefully begin even before the meeting begins. As part of its system, described in more detail in Chapter 6, the Parliament of the Netherlands has developed modules that specifically support the collection and processing of information in advance of the start of the session. One module is used to gather information beforehand concerning the type of meeting; date, time and room; relevant documents and links; and the agenda. All of the information is used when the final report of the proceeding is processed for publication. See Figure 3.2.

Figure 3.2: Screen shot of the application for collecting and processing information in advance of the meeting in the Dutch Tweede Kamer

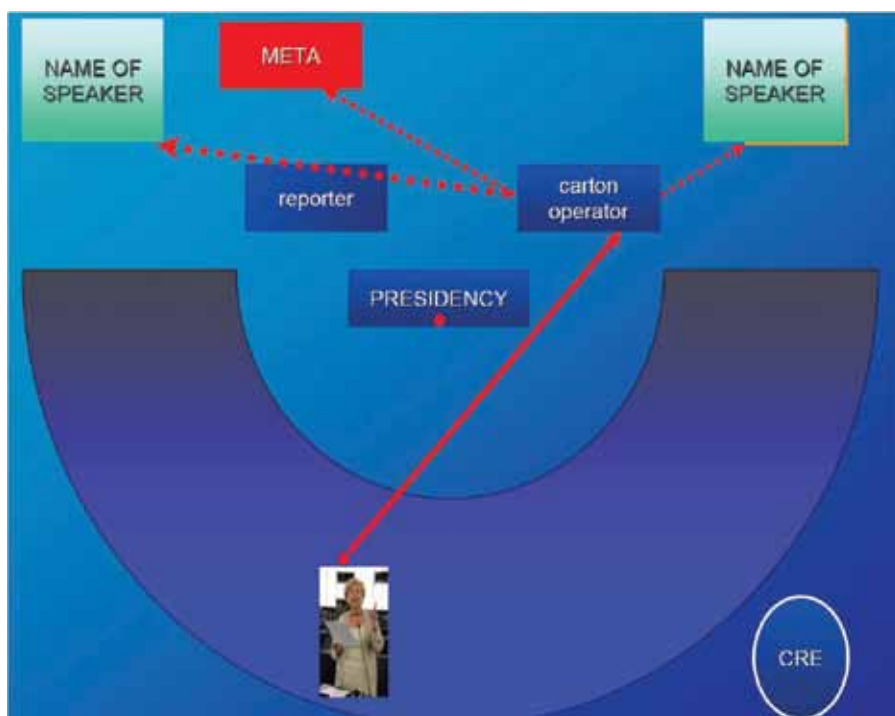


Source: Presentation at the *Workshop on Technology Options for Capturing and Reporting Parliamentary Proceedings*, European Parliament, Brussels, Belgium, 14-16 July, 2010.

The collection of metadata during the capturing phase can be seen in the procedures of the European Parliament, as illustrated in Figure 3.3. Before the start of a plenary meeting an application called CARTON is loaded with the agenda, data about the members (nationality, language they will speak, etc.), the provisional list of speakers, and the seating plan. CARTON is then used to feed an application called META, which tags video recordings, and an application called CRE, which is used to support the production of verbatim reports. When a member switches on the microphone from the assigned seat to take the floor, a picture of the member appears on the CARTON screen. The CARTON operator must then visually verify that the speaker is correctly identified, as it may happen that several members share a microphone, or a member may speak from a microphone that is not his or her own. The operator then sends the metadata about the speaker to the META application, where the name of the speaker, language, function, and timestamp show up. A reporter verifies and validates the information in

META, which is then sent automatically to the CRE application that secretaries and editors use to type and revise the text in the original language of the speaker. The texts are subsequently translated into all the official languages of the European Union.<sup>13</sup>

Figure 3.3: Initial capture of metadata at the European Parliament



Source: Presentation at the *Workshop on Technology Options for Capturing and Reporting Parliamentary Proceedings*, European Parliament, Brussels, Belgium, 14-16 July, 2010.

These systems illustrate several points about the capture and processing of metadata. First, data such as the agenda and names of planned speakers are collected and processed before the plenary meeting begins. Second, even with a highly automated system, several staff with different skills are needed to operate the system and verify the accuracy of the data collected. Third, the metadata that is processed is used to support several different systems and functions. In the example from the European Parliament the metadata are used to tag the video and also feed the system that is used by transcribers and translators to produce verbatim reports.

## Technical Options

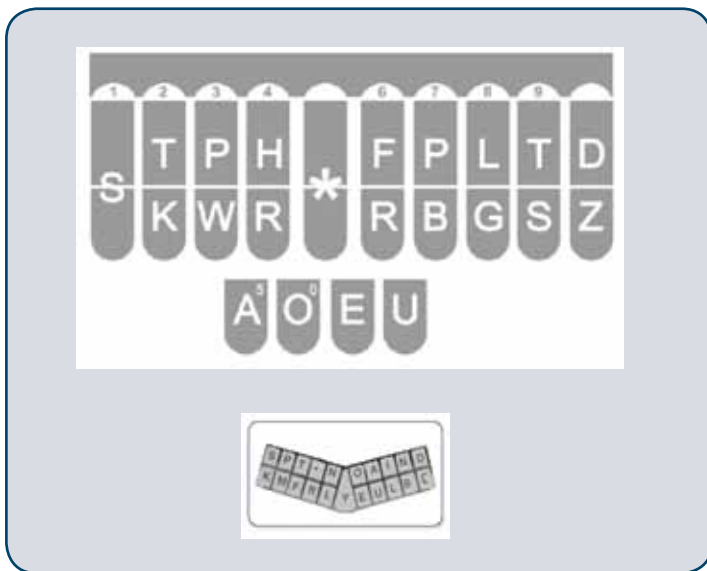
Technical options for capturing the text of proceedings vary depending on whether the parliament chooses to use computer-assisted stenography in which text is produced directly or to use audio (or video) for capturing the proceedings and then to produce text by transcribing the audio portion of the record.

<sup>13</sup> See *Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop*. European Parliament, Brussels, Belgium, 14-16 July, 2010. pp. 25-26. <http://www.ictparliament.org/node/1535>

### COMPUTER-ASSISTED STENOGRAPHY

Computer-assisted stenography involves a computer-supported stenographic keyboard on which the reporter enters a sequence of letters and symbols; the machine then transforms these sequences into clear text. See Figure 3.4 for examples of the two different keyboards used by the Canadian Senate for capturing text in English and French.

Figure 3.4: Stenographic keyboard used in the Senate of Canada for capturing text in English (upper) and French (lower)



In addition to keyboards, a stenography-based system requires a number of other technical components. Box 3.3 describes the system components used by the Senate of Italy. As noted in this description, some stenographic machines can also capture audio.

**Box 3.3: System components used by the Senate of Italy for capturing proceedings**



The system used in the Italian Senate includes: a stenographer who uses a Michela stenotyping keyboard to capture audio input for text/audio synchronization; a commercial software package to manage the text processing; and network connections. Text is produced in real time and transferred to the back office via shared folders. Text is also printed on a paper strip as a backup. The text contains timestamps pointing to the audio file recorded by the stenotyping software.

Source: Presentation at the *Workshop on Technology Options for Capturing and Reporting Parliamentary Proceedings*, European Parliament, Brussels, Belgium, 14-16 July, 2010.

Because computer-assisted stenography can immediately produce text, it has a number of advantages. For example, the text can be used in its unedited form as near real-time input for services such as instant transcription for the hearing impaired, live transcription displayed on monitors, closed-captioning broadcast modules, and data feeds to broadcasters covering the proceedings. In addition, the text can be available very quickly for editing.

CAT systems can also work over wireless networks, which add the possibility to support offsite meetings. This is valuable when committees travel to other parts of the country to hold hearings. Capture can be conducted on-site and the results transmitted back to the parliament for further processing.

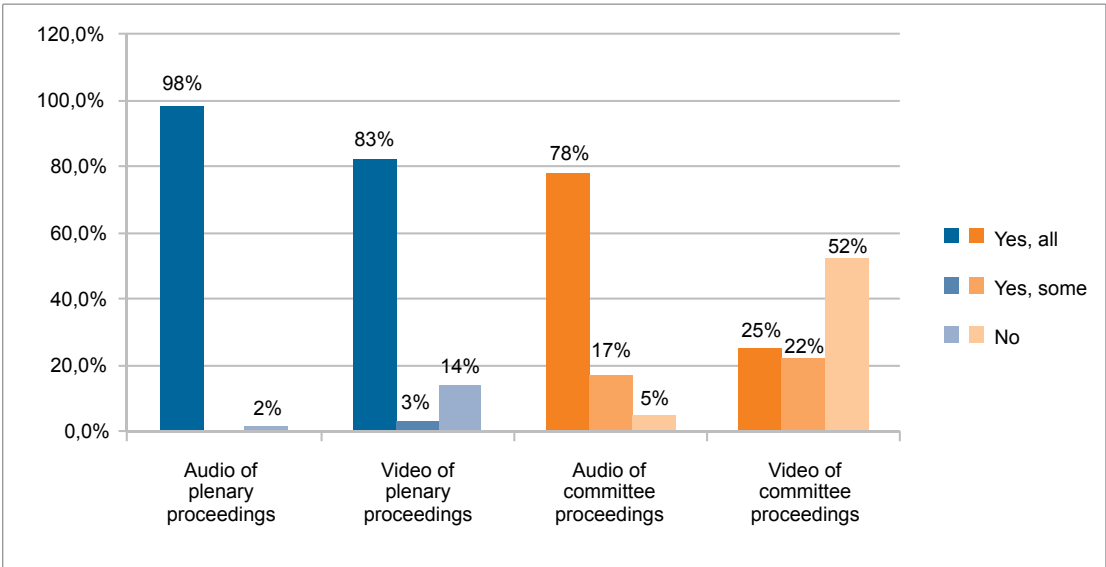
The difficulties have already been noted earlier in the discussion on staffing. It can be challenging to find trained staff to replace those who retire; there are fewer and fewer people who pursue a career in stenography, even when it is computer-assisted. Although the use of this technology has grown in China, it may be difficult to procure stenography hardware and software for other non-Latin languages.

**AUDIO AND VIDEO CAPTURE**

Many of the parliaments that completed the CRPCSP survey reported that they capture plenary and committee proceedings through audio or video recording. Staff can then listen to the proceedings on playback devices and transcribe them to text using a variety of methods. See Figure 3.5.

Some parliaments keep the audio or video in analog format only. This can slow the transcription process and does not provide the advantages that workflow software can offer for managing records, nor does it easily support publication of the audio or video records on the web. Not converting audio and video records to digital format also poses significant challenges in terms of storage and retrieval of audio or video records.

**Figure 3.5 - Percentages of parliaments capturing audio and video records of plenary and committee proceedings**

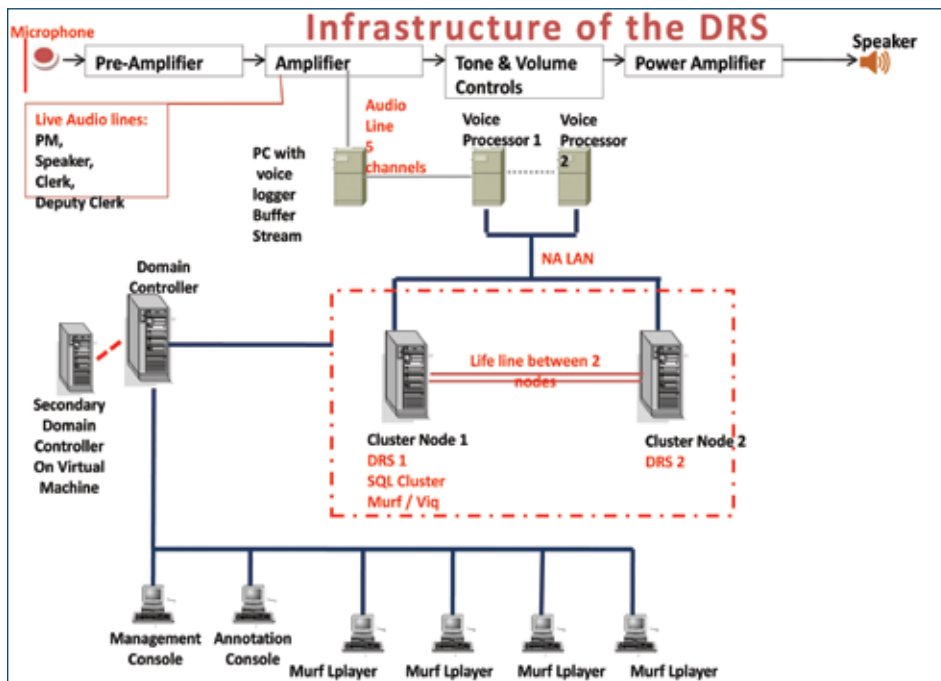


Source: Survey CRPCSP, Questions 1.0A, 1.0B, 1.0C and 1.0D.

This handbook, therefore, recommends that analog audio or video records be converted to digital formats and stored on networked storage devices, and that the digital output be used for all subsequent processing. This conversion is done most efficiently at the time of initial capture. The resulting digital output can then be divided into segments that are transcribed to text through a variety of methods using workflow software. Options for converting audio records to verbatim text records will be discussed in more detail in the next chapter.

An example of a digital recording system can be seen in Figure 3.6. This diagram shows the numerous hardware and software components that are required, including microphones, amplifiers, tone and volume controls, speakers, voice loggers and processes, domain controllers, management and annotation consoles, and backup systems. In this system, acquired by the Parliament of the Republic of Mauritius, the commercial program MURF is used to manage the capture and conversion of audio records into digital format.

Figure 3.6: Digital Recording System used by the Parliament of the Republic of Mauritius



Presentation made at the *World e-Parliament Conference 2012*, Chamber of Deputies of Italy, Rome, 13-15 September 2012

The disadvantage of systems that capture audio and then transcribe to text is that it can take longer to produce the initial text version of the report, although parliaments taking this approach can often release a preliminary edition of the report in text within an hour. Still this does not match the speed with which the unedited text that can be produced by stenographic systems.

An advantage of audio capture and transcription on a computer is that it can be used by parliaments in countries for which a stenographic system does not exist for all official languages, since the only technical requirement for audio capture and transcription is a keyboard that can support the language or languages spoken by the members.

### CAPTURING METADATA

As Figures 3.2 and 3.3 illustrate, parliaments have developed various systems to assist in the collection of metadata both before and during the capture phase. These systems usually form part of a larger system that serves all of the processing requirements of the final report of proceedings, including the incorporation of related information and documents; management of the various segments of the verbatim report for transcription, review, and (where required) translation; collation of all components of the report; and final preparation for publishing. Examples of systems being used by some parliaments are given in Chapter 5.

Some metadata elements that need to be collected either before or during this phase include:

- Member
  - name, bio
  - political group (i.e. party)
  - parliamentary body (i.e. committee)



- Session
  - ID: date, room, parliamentary body
  - agenda
  - main actors (President, Vice President, etc.)
  - type: hearing, voting, speech
  - secret or public
- Proposal
  - Actors (members) and roles (author, reporter)
  - texts, amendments
  - votes

## Summary

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Phase I involves the procedures and technology for capturing members' speeches and statements and the actions taken during parliamentary meetings. There are two primary methods for capturing speeches and statements: 1) computer-assisted stenography (also referred to as computer-assisted transcription or CAT), in which reporters enter a sequence of letters and symbols that are converted almost simultaneously to full text and 2) audio and/or video recording, which is converted to text in a subsequent phase by direct keying or by voice-to-text dictation. In either case, reporters must be able to identify the speaker, the parliamentary context of the statement, and the actions taken during the meeting. During this phase certain metadata should also be collected, including, in addition to the speaker's name, the date and time of each statement, the subject, and agenda item being considered.

Although these methods of capture allow parliaments options in deciding which format will be the official record of proceedings, this handbook recommends that it be text. The three formats – text, audio, and video – are complementary and can be used effectively together to offer a more complete record. However, text is currently easier to use and to preserve and can be published in both print and online modes. In making this determination, however, it is also important to consider which formats are more accessible to the public.

Management issues in this phase involve staff capabilities and work procedures. The skills required of staff will depend on the method chosen for capture. Computer-assisted stenography requires a high level of expertise in the use of this technology; many staff can type as much as 200+ words per minute. The challenge is that the skill level required is not readily available in all countries. If capturing is done by audio or video recording, staff are needed who can setup and manage networked recording systems; also needed is staff who can transcribe the audio or video record to text. In both methods of capture, staff must be knowledgeable about the legislative process. Some parliaments supplement their own staff resources by using outside contractors for preparing plenary or committee records.

Procedural issues involve questions of whether reporters should be in the meeting room and for how long. The most common practice is for reporters to be in the room for 5-15 minutes shifts, after which they prepare the verbatim transcript for their segment of coverage. Being in the room is important for understanding the procedural flow and the context and meaning of members' statements. Reporters or other staff are also needed to collect metadata during this phase so that it can be used in the management of the transcription process as well as to integrate audio and/or video records with the text. The capture of metadata works most efficiently when workflow or other systems are setup to support this task. Examples of such systems can be seen in the Dutch Parliament and the European Parliament.

While the different methods of capturing proceedings are distinct, some of their functional capabilities are beginning to merge. Today, a number of vendors offer stenographic devices that can record the audio at the same time, thus making the editing process in phase 2 easier. Both stenographic and audio recording methods require a robust system of microphones, network support, and good file and database management systems. Workflow systems, discussed in more detail in Chapters 4 and 5, are also important for enabling the capturing, transcribing, processing, and publishing phases all to run more efficiently.

## Chapter 4

# PREPARING VERBATIM REPORTS

### Introduction

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Phase 2 involves the preparation of the initial and revised versions of the verbatim report of proceedings. This report is usually prepared first by a reporter or transcriber and then passed to an editor for review and correction. In some parliaments the rules of the chamber permit members to review and make corrections before the final version of the report is released. Some parliaments also provide verbatim reports in more than one language. This requires additional staff and can add to the time required to complete a final version of the report.

Most reports of proceedings also include references to, or the actual text of, documents considered during the meeting, as well as procedural results such as decisions and rulings made during the meeting, votes taken, etc. The incorporation of these elements into the final report will be noted here, but discussed in more detail in the next chapter on processing reports. The focus of this chapter is on reporting the words spoken during the meeting.

### Policy Issues

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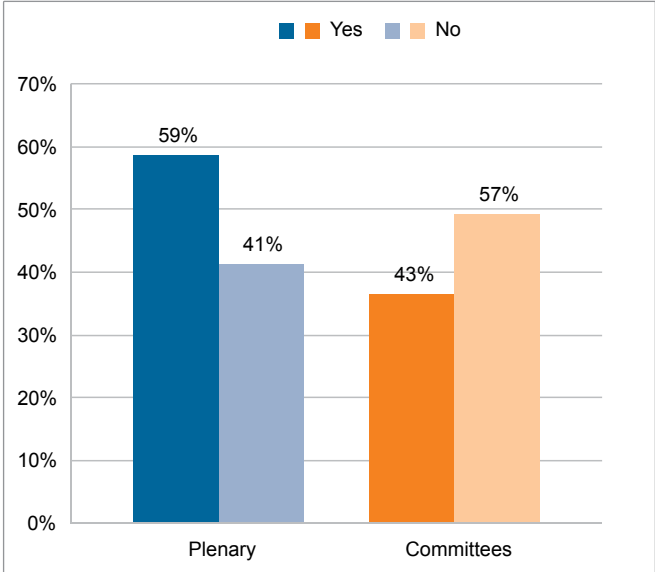
Verbatim means “word-for-word” and normally refers to text. Some parliaments allow reporters and editors to make limited changes to ensure that the report is understandable; some allow it to be “substantially verbatim”; others require a report that is literally word-for-word. Because of advances in technology, however, the idea of what constitutes a verbatim report may also be influenced by whether a parliament captures an audio or video record and whether that record is retained and made publicly available immediately and/or at a later time. These issues will become increasingly important as more parliaments choose to record proceedings in both text and audio/video formats. If video records of proceedings come to be seen as more accurate and more complete, the current concept of a verbatim text report may, in some parliaments, undergo change.

For the present, however, the phrase “verbatim report” will be used in this handbook to refer to the text version of the report of proceedings. This definition will include reports that are required to be exactly word-for-word as well as reports in which some editing is permitted. In this context, a key policy issue to be addressed in this phase is *what types of corrections, if any*, to allow in the preparation of the report. There are three main sources of correction: the reporter, the editor and the member.

While most parliaments expect *reporters* to transcribe as closely to word-for-word as possible, many give them some latitude in making minor changes, such as when a member violates a rule of the chamber in how other members may be addressed, or makes an obviously unintended mistake such as referring to a bill by a wrong number. *Editors* or next level reviewers may find it necessary to correct mistakes in the first version of the transcription. They also may be responsible for ensuring that the procedural context of the verbatim statement is correctly described. In some parliaments a third review of the report is made by a senior member of the staff before final publication.

As seen in figure 4.1, most parliaments do allow members to make changes to verbatim plenary reports, although not to committee records. *Parliaments vary, however, in the extent of the changes they permit.* Some insist on strict adherence to word-for-word transcriptions and do not allow any alterations by members. Some allow minor changes that do not alter the meaning of a spoken statement. Chambers also vary as to when review by members may occur. Some allow review before publication, while some allow review both before and after publication. An example of the latter can occur if a parliament publishes a soft-bound paper edition and at some later time publishes a hard-bound paper edition. Interim verbatim reports which are not considered final are not reviewed by members in some parliaments, although the final version is normally reviewed in those chambers that permit such changes.

Figure 4.1 - Members of parliament are allowed to revise verbatim record



Source: Survey CRPCSP, Question 3.6. Note that not all participants in the survey responded to this question. Committees: (86%)

Most parliaments also have procedures for resolving disputes and confirming that the report is official. In some chambers, the report of proceedings is accepted by a formal procedure in a subsequent plenary meeting. Members are sometimes permitted to register an official disagreement with the report if they have not been allowed to change it. In some chambers the Secretary General is authorized to resolve disputes regarding the accuracy of a statement and to attest to the correctness of the final report.

### Management Considerations

The management issues relating to capturing proceedings, which were discussed in Chapter 3, pertain as well to transcription. These issues focus particularly on the qualifications required of the staff, which depend on the procedures and technology used to capture proceedings. In addition, parliaments that must produce their record of proceedings in more than one language must also factor in the process and cost of interpretation and translation. This can have an obvious impact on resources, depending on the number of languages required. It also affects how quickly the final version of verbatim transcription can be made available.

## PROCEDURES AND PROCESSES

There are three primary ways in which the first draft of verbatim records are produced today: 1) typing on a stenographic machine and utilizing specialized software to produce text directly from translated shorthand code 2) listening to the audio record and typing the text version of that record 3) listening to the audio record and then dictating into a voice-to-text system that produces text.

Figure 4.2 - Voice-to-text workstation in use in the Parliament of Mauritius



1. *Stenographic machine.* As described in Chapter 3, the reporter records a member's statement or speech using a special keyboard to type letters and symbols into a machine that will, in tandem with a computer and specialized software, translate those letters and symbols into understandable text in real-time. The reporter is normally in the room where the meeting is occurring, generally for periods of 5-10 minutes. A second reporter then takes over and the first reporter leaves the floor to proofread and correct the text produced by the stenographic machine. This system can also function in a network environment when reporters write for longer periods of time and the text is edited simultaneously by others.
2. *Typing from the audio record.* In this approach, the reporter listens to the audio record and types what is heard into text. Often the reporter starts by being in the chamber in order to follow the proceedings that he or she will transcribe later. This is important because it allows the reporter to identify those who spoke and to understand the context of the debate and the proceedings.
3. *Dictating from the audio record.* In this approach the reporter listens to the audio record and then dictates via a microphone into a computer that contains voice-to-text software capable of translating his or her spoken words into text. In most cases the reporter listens and dictates in a quiet and controlled environment. In some cases, however, reporters are actually in the meeting room and speak into a mask that prevents others from hearing them. See Figures 4.2 and 4.3.

In all three approaches, the reporter normally proofreads and corrects the first version of the text that he or she produces. This version is then passed on to an editor/reviewer who makes further corrections as needed. An additional review may be required, depending on the procedures established by the parliament. If members of the parliament are allowed to review the record before it is released, they can usually examine it during one of the editing/proofing stages.

Some parliaments also prepare separate summary reports based on the verbatim reports. These summary reports may include the legislative or procedural actions taken during the period covered by the report.

## INTERPRETATION AND TRANSLATION

Parliaments that produce records of proceedings in multiple languages make a distinction between interpretation, which is carried out while the member is speaking, and translation, which is done on the basis of the verbatim statement in the original language. Interpretation does not reflect word-by-word what is said and the interpreted version, even if recorded, is not used as the official translation. Only what was spoken in the original language is sent to the translation unit for an accurate translation of the original text. While this process can begin on the basis of initial versions of the transcript, it cannot be completed until the final version of the speech in its original language is completed.

## MANAGING THE WORKFLOW

Capturing and transcribing involve a significant number of steps and procedures to be followed as the records move through their various stages. Some parliaments manage this complex process through **workflow software**. Depending on its capabilities, this type of software can aid greatly in supporting the initial capture of metadata, such as the name of the speaker, time and legislative issue as well as recording the audio. Some versions of the software can break audio records into specific segments and allow managers to assign them to individual reporters for transcription. The software can also store and track the various versions of the verbatim report as it is first drafted, corrected, and then edited. The most capable workflow software can also support the integration of related documents and records of legislative actions taken into the final report. Finally, workflow systems also support the publication stage of the process. Because of its capacity to perform multiple functions throughout the reporting process, technical options for workflow software are discussed in Chapter 5 on processing.

## Advantages and Disadvantages of Technical Options

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Advances in technology have improved the functionality of the various options for preparing verbatim records. These include enhancements in computer-assisted transcription machines (capture via stenography), voice-to-text software, and workflow software.

### COMPUTER-ASSISTED TRANSCRIPTION (CAT)

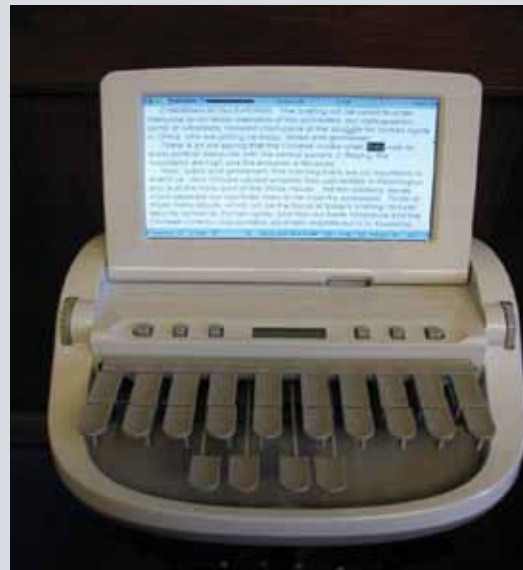
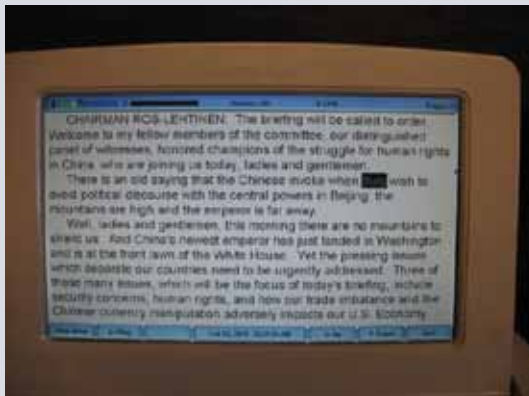
Some of the software manufacturers who produce CAT products also now incorporate the capability of recording audio into their systems. These systems not only capture the writer's shorthand code and translate it immediately into text but also capture an audio record of each speaker. The audio is time-stamped and synchronized with the text. This can simplify editing in cases where the reporter or editor needs to check the audio for accuracy by allowing the user simply to click on the word; the audio then plays at that same spot in the proceedings. As a result, the need to replay the entire segment or rewind or fast-forward until the particular spot is found is eliminated. One potential disadvantage of this feature is that the size of the sound files can adversely affect network speed and the timely access to other files.

As a further example of blending technologies, some vendors also include voice recognition modules in their systems. These can be used in conjunction with, in addition to, or instead of the real time stenographic input. Thus, an organization can have a melded capability (based on available skills) in which some staff reporters use CAT stenographic machines and others used CAT voice recognition.

Some vendors provide portable, self-contained and standalone versions of their systems that may be deployed in an environment with a limited technical infrastructure or in cases where a committee travels and holds its session away from its usual meeting location. Portable systems may also be useful for parliaments that wish to evaluate a specific product before a full scale deployment.

As noted previously this handbook does not endorse specific vendors of products, but does provide representative examples so that users can have a starting point for their evaluations if they wish. In light of that caveat, Box 4.1 lists several vendors (along with their websites) who provide CAT products with a range of capabilities. Some of these products are used by members of the working group who prepared this handbook. Figure 4.3 shows the CAT system currently in operation in the U.S. House of Representatives.

**Figure 4.3 - Stenographic writer used by the House of Representatives of the United States of America**



Diamante CAT stenographic writer used by the U.S. House of Representatives, showing keyboard and display screen with transcribed real-time text. Official Reporters input not only the verbatim spoken word, but also speaker identification and punctuation at speeds of 250+ words per minute. Audio is also captured by the Diamante and synchronized with text. Edits and corrections are made to the real-time text file on a local area networked computer.

**Box 4.1: Examples of CAT vendors whose products offer a variety of stenographic, audio capture and synchronization, and voice-to-text translation capabilities.**

AristoCat: <http://www.aristocat.com/about.htm>

Cheetah International: <http://www.cheetahinternational.com/>

DirecSteno: <http://www.voicecom.ee>

Express Scribe: <http://www.nch.com.au/scribe/index.html>

ForTheRecord: <http://www.fortherecord.com/>

MURF: <http://www.viqsolutions.com>

ProCat: <http://www.procat.com/>

Stenograph: <http://www.stenograph.com/>

Total Eclipse: <http://www.eclipsecat.com/>

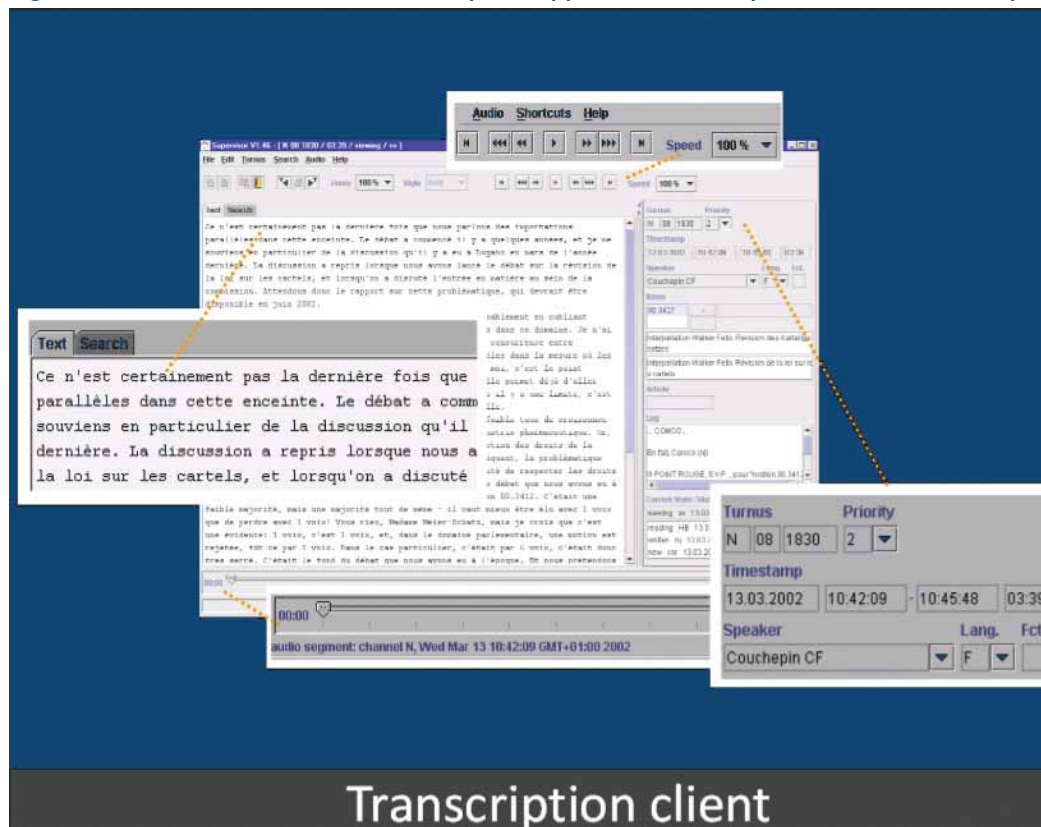
## TYPING FROM THE AUDIO RECORD

Typing from audio is greatly aided when the record is in digital format so that it can be easily divided into segments that are assigned to specific reporters. It is also helpful for the reporter to have a foot pedal to control speed and direction during playback. This approach requires high speed typing skills but little else in terms of technical ability, although transcribers do need to understand legislative procedure.

It is essential to ensure that speakers are properly identified in the record and this usually requires an individual to be onsite for the logging process. When the audio record is used as the basis for preparing the verbatim text record, there is a great need to ensure that microphones are functioning, properly connected, and monitored, with the requisite backup and alert systems in the event of system failure.

This approach has the simplest hardware requirements for producing verbatim records. In addition to a digital recording system as described in the previous chapter, only standard off-the-shelf computers are required. Specialized workflow management software and editors may or may not be used. If a parliament decides to use this approach, however, this handbook recommends the use of these tools in order to manage the assignment of audio segments among a pool of typists and to ensure consistent formatting of the text output. Figure 4.4 shows the screen shot of the transcription application used by the Federal Assembly of Switzerland.

Figure 4.4 - Screen shot of the transcription application used by the Federal Assembly of Switzerland.



Presentation made at the *World e-Parliament Conference 2012*, Chamber of Deputies of Italy, Rome, 13-15 September 2012

Typing from an audio record also has the simplest software requirements of the various methods. It does not rely on voice-to-speech or dictation software, nor does it need a stenographic system. Box 4.2 provides a description of the system used by the Chamber of Councillors of Morocco to prepare its record of proceedings in Arabic.



#### **Box 4.2 - Transcription process in the Chamber of Councillors of Morocco.**

The transcription system (TranscriPro) used in the Chamber of Councillors of Morocco consists of:

- eight transcribers whose task is to type the report of the session;
- one reviewer who reviews the typed text and makes corrections;
- one editor who validates the text before publication.

At the technical level, the transcription system consists of an audio server, an application server, a database server and eight workstations. The transcription process is as follows: At the beginning of the plenary session, each transcriber logs in on a workstation with his/her account and password. As soon as the session starts, the audio server records the sound, splits it in takes (the length of a take can be defined in advance: 3 minutes, 5 minutes, 10 minutes, ...) and sends them to the application server. The application server assigns each take to an available transcriber. The transcriber types the corresponding text and sends it back to the application server. The application server collects the different text files and sends them to the reviewer who corrects the text files (by comparing the typed text and the audio record) and sends them to the editor. The editor collates the files and validates the text, which is then saved in the database. The report is then made available for publication on the intranet and internet.

The system works with all languages supported by Microsoft Word, as it is used by the application as text editor. The sound is saved in MP3 format.

The first version of the report (unedited) can be made available within 20 to 30 minutes after the end of the plenary session.

*Presentation delivered at the Workshop *Technology Options for Capturing and Reporting Parliamentary Proceedings*, European Parliament, 14-16 July 2010.*

#### **VOICE-TO-TEXT SOFTWARE**

Several different types of software can be used to convert voice-to-text. One, referred to in this handbook as “speech-to-text” or “speech recognition software”, is used in an open and uncontrolled environment but is not “trained” to recognize the voice of a particular person. While research is ongoing to improve this type of software, it is still not accurate enough to be considered for use by parliaments to produce verbatim reports. Plenary and committee meetings will normally have a number of speakers who vary significantly in their accents and pronunciation, and these meetings will often have considerable background noise. To be effective, the software must be adapted to the voice of a specific individual who repeats the statements and speeches captured by the audio recording system. However, there is some potential value in the use of this software to produce closed captioning text.<sup>14</sup>

A different application of this type of technology is referred to here as “dictation software.” This software is generally used in a controlled environment although it can be used in a more open environment with a speaking mask, as shown in Figure 4.2. This software is “trained” by a speaker to recognize his or her voice. The software is capable of adapting to the user’s speaking style including accents, pronunciations and even idiomatic phrases. Claims for the accuracy of voice-to-text systems vary, with vendors sometimes reporting a higher rate than those who actually use the software. However, some parliaments have found that with continuous training of the software by reporters,

<sup>14</sup> See, for example, this demonstration at <http://www.pervoice.it/common/subtitleVideo.php?demold=senato&lang=it>

a very satisfactory level of accuracy can be achieved. At the *World e-Parliament Conference 2012* staff of the Parliament of Mauritius reported an accuracy rate of 98% – 99%<sup>15</sup>, which is the rate claimed by the vendor that provides the software to that parliament<sup>16</sup>. Some parliaments also anticipate that the application of speech-to-text technologies will make it faster and easier to link video records to the words of the verbatim report. Both the Italian Chamber of Deputies and the Italian Senate have been using dictation software for a number of years. The Chamber of Deputies uses it to produce preliminary verbatim reports and post them on their website within a few hours. The Italian Senate recently conducted a survey of the dictation software marketplace (See Box 4.3). Based on their assessment, they have chosen to use *Naturally Speaking PRO* made by Nuance Communications<sup>17</sup> to produce their summary reports.

**Box 4.3: Assessment of speech recognition and dictation software.**

The Italian Senate has been an early adopter of voice recognition technologies, exploiting them since 1993, in order to draft summary reports. The product first used did not support continuous dictation and required a custom card to be plugged into the PC. Later versions ran on standard PC hardware and did support continuous dictation. In 2008 the Italian Senate decided to undertake a review and comparison of other speech-to-text software available in the commercial marketplace. The evaluation encompassed technologies for both speech recognition and dictation software, and aimed at comparing recognition accuracy, ease of use, and costs. Despite some improvement of speech recognition software their accuracy still falls below 80% in complex and “noisy” scenarios, and their ease of use still requires further development efforts. On the other hand, some dictation software was found to be inexpensive, and required only limited training; moreover it is quite easy to achieve high accuracy rates (in the order of 98%–99%), even by employees without any specific dictation skill. Ease of use is also an advantage because of native integration with the text editing tools running on top of Microsoft operating systems.

Presentation delivered at the Workshop *Technology Options for Capturing and Reporting Parliamentary Proceedings*, European Parliament, 14-16 July 2010

As commercial applications of dictation software may be costly, parliaments that wish to evaluate voice recognition technology may consider open source speech recognition engines, such as CMUSphinx (<http://cmusphinx.sourceforge.net/>), a toolkit released by Carnegie Mellon University that also includes an acoustic model training tool. VoxForge (<http://www.voxforge.org/>) offers a repository of acoustic models which can be used with open source speech recognition engines. It allows users to upload speech corpora (combinations of audio files and their transcriptions) in order to develop or improve the acoustic models in their languages. Both CMUSphinx and VoxForge tools are freely available under an open source license (GPL).

15 See the presentation on the digital recording system of the Parliament of Mauritius at <http://www.ictparliament.org/node/5015>

16 Software vendor Nuance claims an accuracy rate of 99% for its professional edition. See <http://www.nuance.com/for-business/by-product/dragon/dragon-for-the-pc/dragon-professional/index.htm>

17 See [http://shop.nuance.com/store/nuanceus/en\\_US/pd/ThemelD.20545600/productID.202411800](http://shop.nuance.com/store/nuanceus/en_US/pd/ThemelD.20545600/productID.202411800)

## Summary

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Phase 2 involves the preparation of the initial and revised versions of the verbatim report of proceedings. Verbatim normally refers to word-for-word text, although some parliaments allow corrections and adjustments by reporters, editors, and even by members if these do not involve substantive changes. Most verbatim reports also include the results of actions taken during the meeting, such as votes, and references to bills and other documents considered. The final version may be confirmed by a parliamentary official such as the Secretary General or by a parliamentary procedure such as a vote in the plenary session.

There are three basic methods of creating the verbatim record: 1) typing on a stenographic machine which produces readable text based on shorthand code; 2) typing on a PC while listening to the audio record; and 3) listening to the audio record and then dictating into a voice-to-text system that is adapted to the reporter's voice to produce accurate text. In parliaments with multiple official languages, the translated verbatim record is normally completed after the record in the original language is finished and deemed to be accurate. Workflow software can play an important facilitating role in assigning and managing the recorded segments for creation, editing, and assembly into a complete record. The advantages of workflow software are optimized when the recorded segments of the proceedings can be captured or converted immediately into a digital format.

Stenographic systems allow near real time availability of text. Typing from an audio record is the simplest of the technical options, requiring only the audio capture of the proceedings which reporters who are skilled typists can convert to text. These reporters, however, do still need an understanding of legislative procedures to perform their work knowledgeably and efficiently. General voice recognition software has limited accuracy for preparing verbatim reports in a parliamentary setting because of the diversity of voices and accents. However, dictation software which converts one reporter's spoken words into text can be very effective and provide a high rate of accuracy. The various technical options are beginning to have a number of similar capabilities; some CAT systems, for example, can also capture the audio record and some also have voice-to-text capability.



## *Chapter 5*

# PROCESSING REPORTS OF PROCEEDINGS

## Introduction

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Phase 3 involves the processing and final preparation of reports prior to publication and preservation (discussed in Chapter 6). This includes the incorporation of all metadata; integration of the verbatim report with related documents, such as the text of bills, questions, motions, etc. that were considered during the meeting; final review; and formatting for publication. As noted previously, processing can take place throughout all stages, but it becomes the focal point of this pre-publication stage to ensure both completeness and accuracy.

Typically, processing involves other groups in addition to the reporters and editors who prepare the verbatim reports. These can include legislative staff responsible for meeting documents such as the agenda and bills being considered, staff of the information office or publication office responsible for preparing the report for publication, and review editors (who may be part of the reporting office) responsible for confirming that the report is, in fact, ready for publication. In parliaments with more than one official language the work of translators is also an important element of the processing stage. The IT staff must be able to provide systems that can support each of these organizational units in carrying out their various tasks.

## Policy Issues

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Processing can take time and resources. Key policy issues include how much information in addition to the verbatim text to include in the final report, how quickly the report needs to be published, whether the report will be published in both print and online media, and in what formats it should be stored and for how long. Decisions made in each one of these areas affect the others and may lead to tradeoffs among competing priorities.

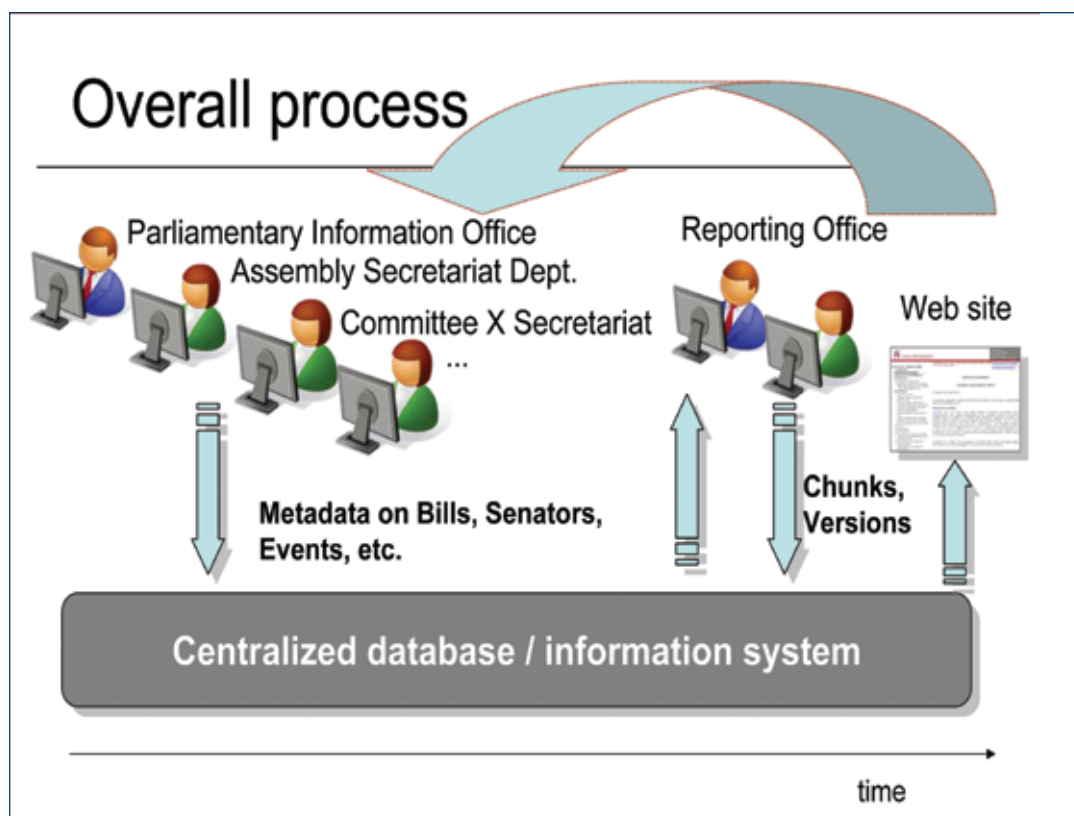
The number and completeness of related documents to be included in the final report, for example, can affect timeliness unless prepared before the sitting. A decision to provide an online and highly interactive version will affect the extent of the metadata that must be added, which can also affect timeliness. However, a decision to emphasize an early deadline for publication may lead to a limit on the number of documents included in the final report (or to including them by reference rather than by incorporating their full text), or it may lead to a decision to publish an interim version that is removed once the final one is available. Providing an audio and/or a video record will also add to the time and resources required for processing, especially if there is the intent to link the text with the audio or video records.

Some parliaments also allow members to insert documents, which may or may not be provided in advance, into the record. Whether to allow this is both a policy issue and a resource issue if the decision is that the full text of the document should be included.

## Management Considerations

Organizational responsibilities are a key management issue during the processing phase. Figure 5.1 illustrates the interdependence of various groups in processing and preparing reports of proceedings in the Italian Senate. The final version of the report that appears on the website requires the combined efforts of the Parliamentary Information Office, the Assembly Secretariat Department, various committee secretariats, and the Reporting Office. While the Reporting Office captures the words of members spoken during plenary meetings, the other offices and departments contribute documents and metadata about bills, senators and events to a central database that can be used by the Reporting Office to create a complete record.

Figure 5.1 - Overview of Processing Responsibilities in the Senate of Italy



Presentation at the *Workshop on Technology Options for Capturing and Reporting Parliamentary Proceedings*, European Parliament, Brussels, Belgium, 14-16 July, 2010.

While most of these offices have other important responsibilities in addition to producing the record of proceedings, they must all work collaboratively to produce an authoritative and timely report. The Assembly Secretariat, for example, is responsible for preparing and distributing an agenda in advance of the meeting, and the committee secretariat is responsible for preparing related documents. The results of their work must serve several different needs and therefore must be prepared, tagged, and stored in ways that support multiple objectives. In such situations, some staff will find it challenging to meet what they perceive to be competing requirements. The group tasked with preparing the agenda and ensuring that the agenda of the meeting is available to members in advance often works under tight deadlines. Consequently, they may feel that the requirements for preparing the agenda so that it can also be readily

accessed by those preparing the record of proceedings places an undue burden on them. This type of concern frequently arises when the staff is called upon to change established methods of working so that their products can serve a number of different parliamentary purposes. Such situations call for leadership and management attention so that all organizational units understand and accept the need for cooperation.

The ICT office must also be aware of and sensitive to these conditions. Its staff needs to have a comprehensive knowledge about the processes taking place and be sure that users are actively engaged in the design of systems that will support multiple and, at times, seemingly conflicting priorities. And they need to be especially adept at building a system that users perceive to be an aid to their work rather than one they see as placing additional and unnecessary demands on them.

Because most reports of proceedings must be produced under tight deadlines, user support in the form of effective help desks and training are very important. The help desk staff need to be well trained and able to resolve problems quickly; they must also be continuously available until the report of proceedings has been published. Training of users is also paramount and upgrades to the application software must be undertaken in close coordination with the user community. Upgrades must be well tested and installed when there is time for users to learn them without the pressure of deadlines.

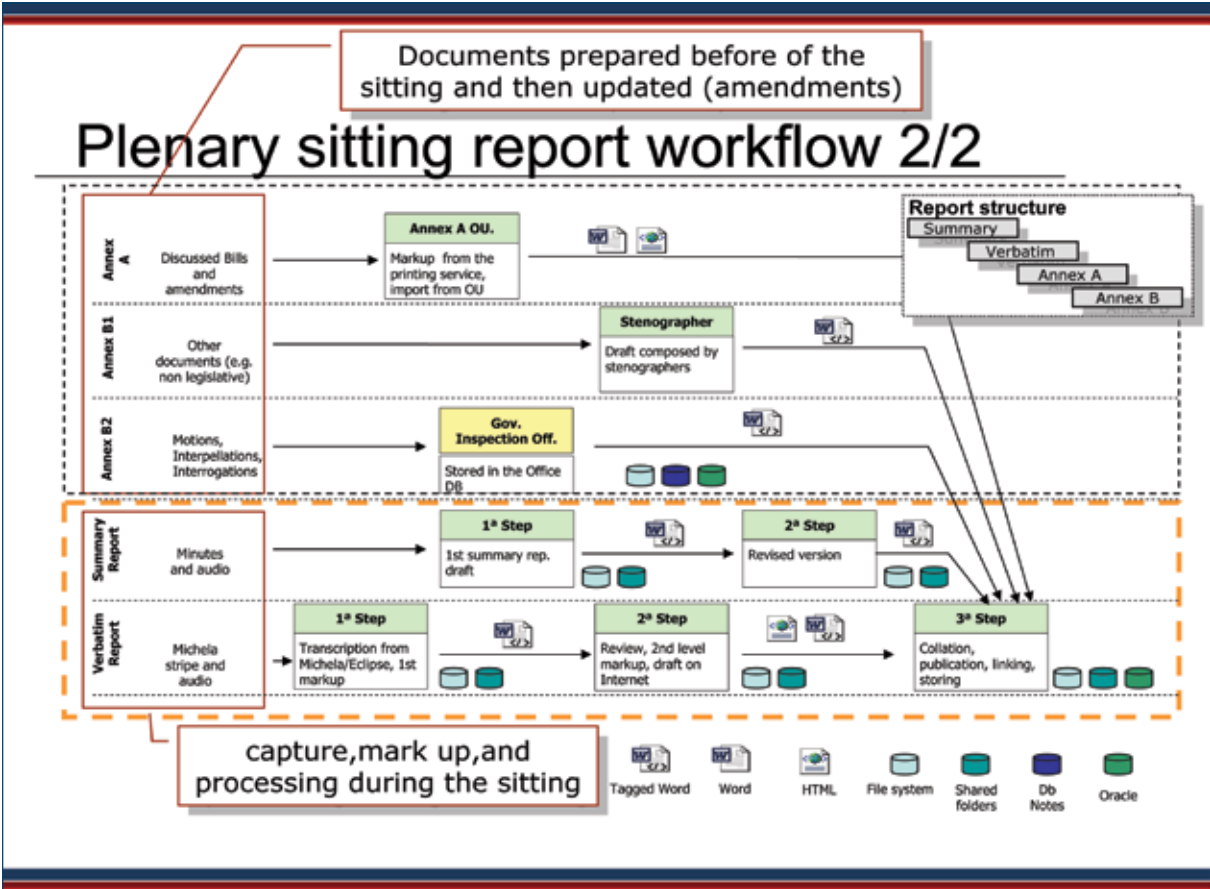
Finally, political commitment to improved systems must come from the top leadership. Increased transparency and enhanced efficiencies are good drivers for change, but only when they have the expressed support of the senior members of the parliament.

## Procedures and Processes

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The complex and collaborative organizational relationships described above are mirrored in the flow of the data and documents and in the systems required for processing the records of proceedings. Figure 5.2 shows the processes that have been implemented by the Italian Senate to support the workflow between offices depicted in Figure 5.1. As seen in Figure 5.2, there are five separate processing streams, each with its own methods of data and document preparation, formatting, and file management and storage. All of these streams must be integrated at the final step for publication.

Figure 5.2 - Processing workflow of assembly verbatim reports in the Senate of Italy



Presentation at the *Workshop on Technology Options for Capturing and Reporting Parliamentary Proceedings*, European Parliament, Brussels, Belgium, 14-16 July, 2010.

There are three primary system flows illustrated in this example, for documents that are prepared before the meeting and then updated as a result of actions taken during the plenary. These include:

- Bills discussed and amendments considered (Annex A in Figure 5.2). These are tagged using Word and converted to HTML.
- Other documents (Annex B1). These are drafted in Word.
- Motions, interpellations; and interrogations (Annex B2). These are stored in a database of the Government Inspection Office and integrated into the verbatim report during the final processing stage.

In addition, during and after the meeting a summary report and a verbatim report are prepared, reviewed, revised, collated, linked, published, and stored.

### Technical Options

As can be seen from this discussion, processing records of proceedings involves a considerable number of steps and components requiring ICT support. Requirements include the need to manage the workflow and to prepare, revise, integrate and store the various elements of the report. Some parliaments use commercial software systems to carry out these tasks while others have developed their own systems. Examples of the former include the Assembly of the Republic of Portugal and the Senate of Belgium.



Even though these chambers utilize commercial software both have found that significant customization is required to meet their requirements. See Boxes 5.1 and 5.2.

#### **Box 5.1 - System of the Senate of Belgium**

CourtSmart is a commercial application used by the Senate of Belgium to produce the reports. CourtSmart provides a digital audio recording system and a workflow module for task allocation and management. Microsoft Word is used for the text edition. Specific tools have been developed to extend MS Word and provide features such as recordings of votes and automatic transmission by email to the speakers of the text of their speeches. The project started in 1998 in the framework of a wider initiative aimed at re-structuring five different departments involved in the production of various reports. Because of limited communication between the offices in charge of the verbatim report and the one in charge of summaries, there was a lot of duplication. A set of technical requirements was defined for the new system. It had to be a client-server environment, with audio records encoded and stored on a server and accessible throughout the Senate. A backup server would provide redundancy and continuity of service. Its hardware and software components had to be compatible with the infrastructure already in place. Some functional requirements were also defined. The new platform had to be as flexible as possible, allowing different types of publications and word processors. It had to provide workflow management features, and it had to support more than one language (French and Dutch). Finally it had to allow the publication of a provisional report within 3 hours after the end of the session. The initial purpose of the CourtSmart system, developed by a U.S. company of the same name, was to manage transcription of court proceedings. It had a basic workflow that was extended to meet the needs of the Senate. It allowed simultaneous encoding of the audio records and insertion of timestamps to be used by the transcribers. The audio records are available for playback even before the end of the recording.

*Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop.*  
European Parliament, Brussels, Belgium, 14-16 July 2010, pp. 8-9 <http://www.ictparliament.org/node/1535>

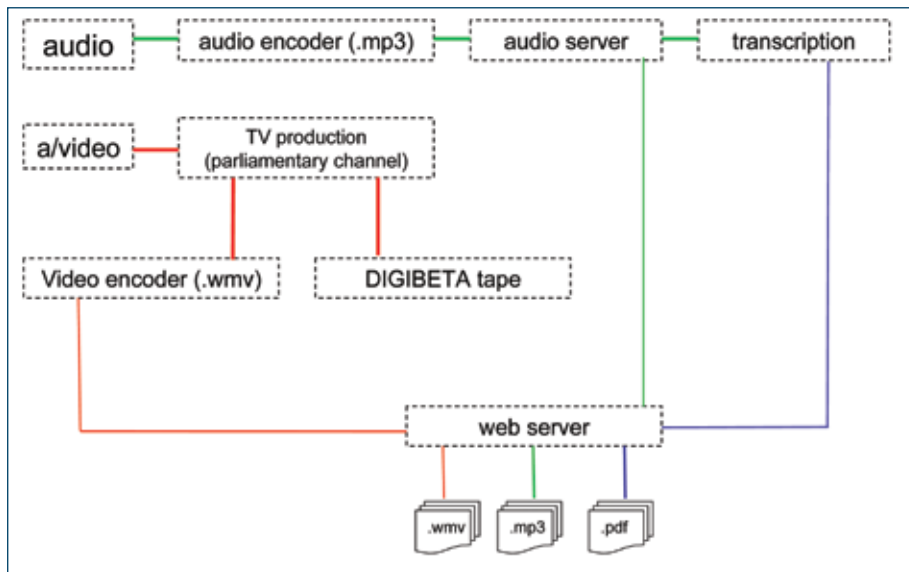
#### **Box 5.2 - System of the Assembly of the Republic of Portugal**

Unable to find satisfactory solutions on the local market, the Parliament issued an international tender which led to the Mediabox system by Xstream. The system is modular and went through a high degree of customization to meet the particular needs of the Parliament. Software modules provide key features such as encoding the audio, cataloguing and indexing the records, scheduling tasks, transcribing and publishing. An application server provides all the applications of the system and a web server provides access for the management of the system, as well as search and retrieval of the records. Storage is assured through a 9TB online system and a tape library. A key requirement of the system was that it had to work within the existing network infrastructure and capacity. The entire system is remotely managed and can be controlled by one single person.

*Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop.*  
European Parliament, Brussels, Belgium, 14-16 July 2010.

Note that for both Parliaments, the workflow software supports all stages of the process: capturing, transcribing, processing, and publishing. The diagram in Figure 5.3, which was the basis for the development of workflow system of the Assembly of Portugal, illustrates this point.

Figure 5.3 - Main workflow of capturing and reporting proceedings in the Assembly of the Republic of Portugal



Presentation at the *Workshop on Technology Options for Capturing and Reporting Parliamentary Proceedings*, European Parliament, Brussels, Belgium, 14-16 July, 2010.

The two houses of the Dutch Parliament and the Brazilian Chamber of Deputies have instead designed their own systems. See Boxes 5.3 (the Netherlands) and 5.4 (Brazil).

### Box 5.3: Dutch digital reporting support system

Designed specifically for the Reporting Office, VLOS [the Dutch acronym for digital reporting support system] is intended to further digitize the reporting workflow and reduce the amount of paperwork. In its initial phase, it will be rolled out only for the proceedings of the plenary sittings. Three reporters are part of the project team working on implementation. Their role is to ensure that all aspects of the reporters' daily practice are taken into account in the new system, and that its output is functionally equivalent to what the reporters have been producing traditionally.

The design of the system prompted an analysis of the entire workflow and led to a better streamlining and rationalization of the process, with a clear definition of the distinct roles and agents involved. The system will replace the current practice of manually taking notes in the Chamber, either in shorthand or longhand, with digital markings made on a computer in the plenary hall. In a ready-made text document automatically linked to the corresponding audio records, these markings will constitute the framework in which the reporters will subsequently transcribe the audio recordings of the proceedings. The digital output of the system allows for a quick publication in various formats.

VLOS is a server-side software system based on Microsoft SharePoint which has been adapted to the needs of the Reporting Office. SharePoint is a collaborative platform allowing users to share documents and work together across the intranet. For each meeting, VLOS creates a workspace in which it allows different agents with different roles at various stages of the process to make their contributions to the final product. VLOS relies on standard SharePoint features for documents management. Documents can be part of reports, but also motions tabled in the House.

*Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop.* European Parliament, Brussels, Belgium, 14-16 July 2010, pp. 19-20 <http://www.ictparliament.org/node/1535>

#### **Box 5.4: Brazil Chamber of Deputies system**

Sitaq (Tachygraphy Information System) is a 3<sup>rd</sup> generation system developed in-house to manage the process of capturing the verbatim records. The system was designed in accordance with a precise set of requirements provided by the reporters, and it is highly customized to meet their needs. Sitaq fully automates the various steps of the workflow, from capturing, to reviewing to managing. The unrevised verbatim records of the plenary sessions are available within 30 minutes. For committee meetings, they are only produced on demand. The verbatim reports include the speeches in two versions: full texts and summaries. As the text is revised, the intermediate versions are immediately made available online, so the changes can be fully audited. The intermediate versions are deleted after 3 months. The various pieces of the full report of a session are automatically collated and formatted into a single PDF document which is made available within two hours after the end of the session as the official report of the meeting. The system consists of a client-server architecture developed in Microsoft Visual Basic 6.0 and Microsoft SQL Server 2008. Reporters use a highly customized embedded version of Microsoft Word to edit the verbatim reports. They can use shortcuts to fetch information such as the name of the speaker directly from the database. They can play the corresponding audio records from SisAudio (the audio recording system).

*Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop. European Parliament, Brussels, Belgium, 14-16 July 2010, pp. 24 <http://www.ictparliament.org/node/1535>*

It can be noted that in all of these descriptions of workflow systems, the involvement of the users (reporters and editors) who are responsible for producing the verbatim reports was very important. As one participant in the Workshop noted "...users, reporters and stenographers, are the most important enabling technology [and a] good relation between the Reporting Office and the IT Department is crucial to the process of automating reporting activities."<sup>18</sup>

Also of considerable importance in these descriptions of systems is their reliance on open standards or open source software where possible. The Dutch Parliament, for example, reports that even though the verbatim report is prepared in MS Word, the resulting document "...is saved in the XML format, which allows further processing, such as the extraction of all text elements corresponding to interventions by a specific speaker for the purposes of verification."<sup>19</sup> The Belgian Senate points out that "Although CourtSmart is not an open source system, the use of the open source MySQL database software allows direct extraction of information from the CourtSmart database to be reused for other purposes. The system [also] supports open standards such as Ogg/Vorbis [an open standard for video.]"<sup>20</sup>

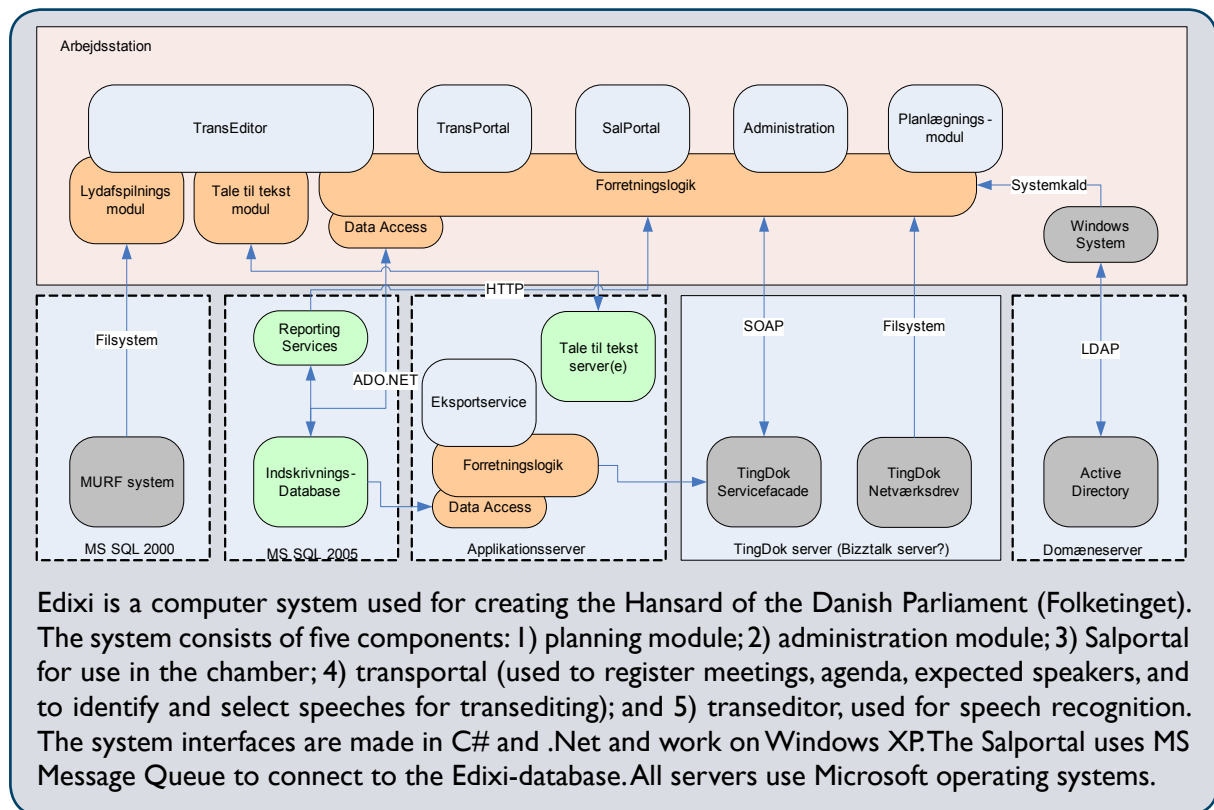
The system developed by the Danish Parliament (Folketinget) is a hybrid model that incorporates some commercial software for major applications, such as MURF for digital recording and SpeechMagic for dictation-based transcription. Other applications have been developed internally for some functions. In this respect the Danish system resembles that of the Parliament of Mauritius described in Chapter 4. Figure 5.4 shows the systems and their interfaces; Box 5.5 describes the operation of the systems.

<sup>18</sup> *Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop. European Parliament, Brussels, Belgium, 14-16 July 2010 p.18 <http://www.ictparliament.org/node/1535>*

<sup>19</sup> *Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop. European Parliament, Brussels, Belgium, 14-16 July 2010, p. 20 <http://www.ictparliament.org/node/1535>*

<sup>20</sup> *Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop. European Parliament, Brussels, Belgium, 14-16 July 2010, p.9 <http://www.ictparliament.org/node/1535>*

Figure 5.4: Edixi system used by the Danish Parliament to process records of proceedings



**Box 5.5: Operation of the system of the Danish Parliament.**

Parliamentary groups, members of the groups, editors (users), and other basic data are entered in the administration module. In preparation for a meeting data are imported from the Document Handling System (TingDok). This includes year, seating, meeting number, date and time of the meeting, systemID, members in the meeting and expected chairmen, plus the agenda. An agenda item can have supplementary items. During the meeting the editor in the chamber makes timestamps for each agenda item and for each speaker.

All speeches in the Chamber are recorded digitally with the use of the MURF recording system from VIQ Solutions (<http://www.viqsolutions.com/products/murf.aspx>). The Folketing records are taken in 5 minutes sequences and one long take of the whole meeting. The recordings are registered in the MURF database with timestamps.

The editors use the timestamps in Transportalen to find a working sequence of approximately five minutes. The selection shows in a separate window and is used to open the working sequence in the Transeditor. When the Transeditor opens it connects to the SpeechMagic database to verify the user and to get the user profile. It also connects to the MURF database and gets the relevant recordings for the working sequence. In the Transeditor it is possible to change the metadata of the speech and to concatenate or divide speeches. Using the Transeditor, the editor listens to the speeches from the meeting and transcribes them into text by speaking the words in a microphone. The spoken words are transformed into text in the SpeechMagic system ([www.speechmagic.com](http://www.speechmagic.com)). When the editor has finished, the text is converted into XML (LexDaniaXML) and stored together with the metadata in the Edixi database.

Every 10 minutes, the export module sends the full text of the meeting that has been edited since the last export (configurable). The XML documents are converted into HTML and PDF and presented automatically on the websites and stored in our Document Handling System.

An example of a system that is focused particularly on the use of open source software and that encompasses all phases of the process is BungeniTranscribe, which is part of the Bungeni parliamentary information system. See Box 5.6.

#### **Box 5.6: BungeniTranscribe**

BungeniTranscribe, which is a module within the full Bungeni parliamentary information system\*, supports the transcription, review and publishing of video/audio and texts of parliamentary proceedings using open source software. Bungeni seeks to provide a simple and seamlessly integrated solution within short turnaround times.

The transcription module of Bungeni consists of two components:

- a multi-platform stand-alone application used by the parliamentary staff on their workstations to do the actual work of transcribing a sitting;
- a module of the Bungeni system that facilitates the review and publishing of the transcripts.

The transcription of proceedings goes through a workflow system that involves several categories of people including editors, reviewers, chief editor, MPs, etc. The Bungeni workflow system can be adapted to the specific needs of each parliament. In generic terms the workflow system covers:

- **Scheduling.** Sittings can be scheduled using a simple user friendly interface common to any diary/scheduling application.
- **Creation of turns for transcribing.** Staff are assigned to work on the sitting by a supervisor such as the Chief Hansard Editor. Each transcriber is assigned a segment of the audio/video of the sitting called a “take”.
- **Transcriptions.** Transcribers log in on their desktop module and retrieve from the system the part of the audio/video they have been assigned to transcribe. They will have the option to use foot pedals or keyboard shortcuts in order to slow down or speed up the recording to fit their needs. Once a transcriber finishes transcribing his/her take, they submit it directly to Bungeni.
- **Revision and collation.** The review process is then conducted to ensure that the transcripts submitted by the transcribers are a true and faithful recording of what took place. Bungeni supports any revision hierarchy that a parliament may have, whether or not it includes several levels.
- **Revision of draft transcription by MPs.** Members of the Parliament have access to the draft transcription in their Bungeni Workspaces before it is published and will be able to submit their notes, if needed.
- **Publication.** Once verified and approved, the record of proceedings is then published online and sent to the pre-press unit in XML, ODT and PDF formats.

BungeniTranscribe leverages free and open standards and technologies such as Ogg Vorbis and Ogg Theora, HTML 5, Annodex and VLC. For more information see: [www.parliaments.info](http://www.parliaments.info)

\*[www.bungeni.org](http://www.bungeni.org)

From these examples of systems used for processing records of proceedings in various parliaments, it is possible to summarize at a general level the functional and technical requirements that this handbook recommends be supported. While many parliaments are able to produce reports of proceedings without having all of the capacities listed below, each one offers advantages that can make the process more efficient and effective.

## Functional and technical processing requirements at a general level

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1. A workflow system or method for task management, scheduling, importing of metadata and documents, allocation of record segments for transcription;
2. An audio recording system that can capture statements and speeches made during the meeting and convert from analog records to digital records stored on servers  
*and/or*  
A stenographic system that can capture statements and speeches made during the meeting through computer-assisted transcription technology;
3. A method for transcribing records captured in audio or stenographic formats into text;
4. Editors/word processors that can produce tagged output, preferably in an open standard based on XML;
5. The capture and integration of metadata into interim and final records before, during, and after the meeting;
6. Support for formatting multiple publication formats (print and online) within short deadlines (several hours for interim records; 24 hours for permanent records);
7. For some: Support for integration of text with audio and/or video records;
8. For some: Support for multiple languages;
9. A content/document management system for easy storage and retrieval of relevant information, documents and other digital assets. For some, integration with a workflow system provides a number of advantages;
10. Specialized editing applications that can operate over a distributed network, allow retrieval and insertion of metadata and are integrated with the workflow system and the content/document management system;
11. A local area network infrastructure that facilitates distribution of task and resources, sharing of information and communications across several workstations;
12. Hardware and software that are compatible with the existing infrastructure;
13. Contingency plans for business continuity, including both organizational plans and backup systems for security and for ensuring that the failure of one or more systems will not prevent the parliament from being able to record and publish its proceedings.

## Summary

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Phase 3 involves the processing and final preparation of reports required for publication and preservation, including the addition of documents considered and the procedural actions taken during the meeting, along with metadata not previously entered. This phase calls for close cooperation among several offices/departments within the chamber: those who prepare the final version of the report, along with those responsible for the meeting documents, the management of the website, translators (if needed), the information office, and the ICT staff, including the help desk and user support unit.

Processing can take time and resources. Key policy issues at this stage involve questions of how quickly the report needs to be made available, what constitutes a complete final version, and whether formats other than text, such as audio or video will also be made available. Answers to these questions affect the resources needed to process and produce the report; they must be determined by the top leadership of the parliament, who are also responsible for providing the resources needed to implement their decisions.

Technical options at this phase must accommodate a number of steps to manage the workflow and prepare, edit, integrate and store the multiple components of the final report. Some parliaments have opted for commercial systems; others have developed their own. Even commercial systems must usually be customized to meet the rules and procedures of the parliament. This requires that the ICT staff maintain close and regular consultation with the users throughout the development, implementation, and production support stages. It is also important to rely on open standards or open source software where possible.

The experiences shared by various parliaments make it possible to develop a list of functional and technical requirements at a general level. While reports can be prepared without meeting all of these, each one offers capabilities that will facilitate the process. The requirements include:

- Workflow systems or methods
- Audio systems OR stenographic systems for recording
- Methods for transcription to produce verbatim records
- Editing/word processing software
- Methods for adding metadata
- Support for multiple publication formats
- Content management and/or document management systems
- Necessary hardware and communication systems for sharing documents
- Plans for business continuity and document preservation





## Chapter 6

# PUBLISHING AND PRESERVING THE REPORTS OF PROCEEDINGS

## Introduction

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After records of proceedings have been collated, reviewed for completeness and accuracy, and formatted, they are ready for publication. Although some parliaments make interim reports available, the publication phase provides the release of the first official version of the report to members and the public. This version typically includes the verbatim record of members' speeches and statements along with a summary of activities that occurred, the various documents taken up, the votes taken and the decisions made during the meetings.

The format of publication is an important issue. The most basic is a record printed on paper in multiple copies. However, as the Internet becomes increasingly accessible in more countries, and as advances in mobile technology continue, it is possible that an online digital version will become the authoritative edition used in a number of legislatures. Such a step, however, will require the implementation of systems for improving security and for ensuring the authenticity, preservation, and permanent accessibility of the record.

In addition to a text record, advances in technology provide other publishing options. Besides broadcast television of live proceedings, these include audio and video live streaming, and audio and video archives which can be viewed on-demand. As noted previously, when used together, audio/video and text formats can provide a rich and highly informative record of parliamentary proceedings. Achieving a multi-format publication system, however, can entail significant costs and can add substantially to the complexity of the technical challenges noted above.

Once records are published, it is important they are archived so that permanent access can be ensured. Methods for preserving documents printed on paper are well established. The best methods for preserving documents in digital formats are still being tested and developed, although the use of an open standard markup language (XML) is a key requirement. Standards and methods for archiving audio and video formats are evolving.

## Policy Issues

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The growth in options for publishing raises a number of policy issues. Primary among these is the designation of the official version, which was also discussed previously in this handbook, especially in Chapter 3 on *Capturing*. While the paper copy is generally considered the official version in most parliaments, the online digital version has been reported by some to be the format used most often. As noted elsewhere in this handbook, some parliaments have even decided to forego printing and to provide only an online version of the report. Others still print the full report but provide only a digital version of the summary of the meeting or of the portion of the report used for the official journal, which is a separate publication in some legislatures. Although others are considering these paperless options, they do not yet appear to represent a widespread practice.

Online digital versions do offer a number of advantages in terms of publication. Assuming the parliament maintains a website that can be updated on a timely basis, they are less costly to distribute than a paper version. They are easier to search, offer more display options, and can be linked to other information and documents. The major advantage of paper is its ease of access and its longevity. However, as noted, the continuing expansion of the Internet coupled with the dramatic growth in the number of mobile communication devices worldwide makes it reasonable to predict that an increasing number of parliaments will eventually adopt an online version as the official record. This assumes that the challenges of authenticity and preservation can be addressed.

Even after the official version is published, some parliaments allow corrections to be made when an error is found. This usually occurs among legislatures that produce a soft-bound copy of the record and later produce a hard-bound edition (the time period between these editions may range from several weeks to several years). In these cases, the hard-bound edition usually becomes the official version. Corrections to online editions can be made more easily, but this requires a mechanism for tracking changes so that users can determine what was altered.

Related to the issue of the official version is the question of what formats to publish. Options for online documents include HTML, PDF, and XHTML. The benefits of using XML to markup documents have been noted throughout this handbook. With respect to this phase, they include supporting the publication of documents in a variety of formats and on a variety of devices. Current web browsers can render any of these formats on the screen and allow users to print the document in full. These formats also support linking with other information and other documents.

Improvements in technology also enable parliaments to capture the audio records of proceedings relatively easily even in legislatures that use computer-assisted transcription or stenographic systems to produce verbatim reports. This raises the question of whether to publish the audio records on the website along with a text version. Some parliaments use the audio only during the preparation of the verbatim record and then discard it after the text record has been verified. Others retain it and make it available as a supplement to the text.

The capture and streaming of the video of proceedings is also growing as this technology becomes more affordable. The *World e-Parliament Report 2010*<sup>21</sup> found that 43 percent of parliaments currently webcast plenary sessions and 29 percent are planning or considering doing it. The *World e-Parliament Report 2012* found that these numbers had increased to 52 percent and 37 percent respectively.<sup>22</sup> Of those responding to the CRPCSP survey, 83 percent reported that they currently capture video of plenary sessions.<sup>23</sup> Video offers a number of advantages in terms of citizens being able to observe their parliament in action, but it raises other issues such as how to provide access to it, how to preserve it, and what resources are required to support it. These challenges are discussed below under Management Considerations and Technical Options.

Among the questions related to the issue of formats is whether to offer other means of publication such as alerting services, e.g., RSS, which requires XML, or email alerts for subscribers who want to know when specific issues are discussed or when particular members make statements. Also, there is the question of whether to support a service that allows records of proceedings to be easily downloaded so that they can be incorporated into systems offered by other organizations, whether governmental or non-governmental. These types of services are part of the growing effort made by some to establish a more open government by allowing the downloading and re-use of large volumes of official documents and data.

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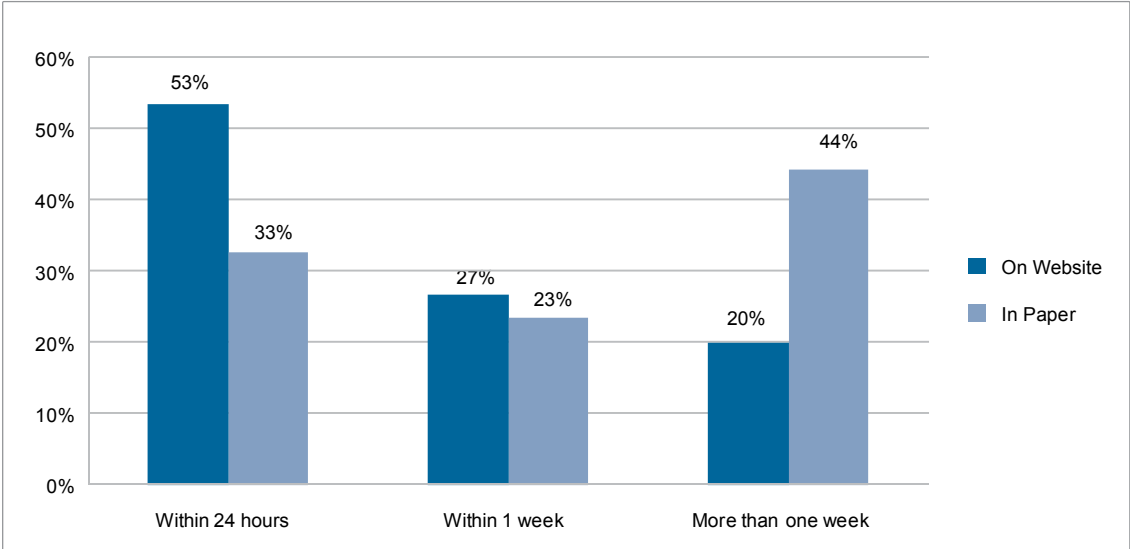
21 United Nations, Inter-Parliamentary Union, *World e-Parliament Report 2010*, [New York]: United Nations, 2010, pp. 31-32 [<http://www.ictparliament.org/wepr2010>]

22 United Nations, Inter-Parliamentary Union, *World e-Parliament Report 2012*, [New York]: United Nations, 2012, p. 30 [<http://www.ictparliament.org/wepr20102>]

23 CRPCSP Survey, question I.1

The issue of when to publish is a function of 1) how quickly the procedures and the technology enable the report to be produced; 2) the expectations of the members and civil society; and 3) the rules of the chamber. Broadcast television and audio and/or video streaming can provide live coverage although these cannot be considered “reports” in the traditional sense. Some parliaments are able to use computer-assisted transcription systems to display closed captioning with video, and there have been demonstrations of the use of voice recognition software to provide closed captioning as well. Again, these are not regarded as “reports”, although they do offer real time access to the proceedings in a text format. A number of parliaments with advanced technologies and efficient procedures are able to release interim reports within an hour of the meeting. Many parliaments strive to release an official version of the record by the day following the meeting. The *World e-Parliament Report 2010*, however, found that almost a quarter of parliaments require a week or more to publish their records on the web;<sup>24</sup> the 2012 Report found that this had increased to one third of parliaments.<sup>25</sup> The CRPCSP survey was similar; 20 percent of parliaments reported needing a week or more to publish on the web. As shown in Figure 6.1, the time to publish in paper compared to on the web is significantly different.

Figure 6.1: Average time to publish plenary proceedings on the web and in paper



Source: Survey CRPCSP, Questions 4.3 and 4.4.

Once a report is ready for printing, its release is dependent on the organization that runs the printing service. Some parliaments manage their own printing operation or contract for it, while others are dependent on services outside of their direct control such as those run by the government. In the latter case it may be more difficult for a parliament to control when its records are published even though they have been fully prepared for printing.

The current state of the technology, however, would at least enable a parliament to publish a record of its proceedings in a digital format on its website at a time that it chooses. If a parliament can provide a sufficient number of trained staff to capture and transcribe members’ speeches and statements, record the actions taken, and review and correct the report, several of the technical options described in this handbook would enable a parliament to provide a digital record of proceedings by not more than a day after the meeting. For this reason, this handbook recommends that an official digital record be made available to members and the public no later than the day following the meeting. If the rules of the

24 *World e-Parliament Report 2010*, op. cit., p59 [<http://www.ictparliament.org/wepr2010>]  
 25 *World e-Parliament Report 2012*, op. cit., p54 [<http://www.ictparliament.org/wepr2010>]

chamber require formal approval of the record at a later date (for example, by the chamber at its next sitting, which may not be the next day), then the preliminary or unofficial record should be available by the day following the meeting, clearly indicating that it is a preliminary version, and informing about when the official version will be available.

This recommended deadline applies to plenary meetings. For a variety of reasons most parliaments require more time to publish a final record of committee meetings. Some do not even prepare records of committee meetings, while others do so only selectively. Committee meeting records that *are* published often remain open for some time to allow participants to provide additional information that has been requested by the committee. Committee meetings held offsite, sometimes at considerable distance from the parliament, may require more time to prepare. For all of these reasons, this handbook makes no recommendation at this time regarding a deadline for publishing records of committee meetings, other than as noted previously that any records that *are* prepared should be compatible and interoperable with other parliamentary information and documents.

Finally, the preservation of meeting records is becoming an increasingly important issue as they become available in a variety of formats. This issue applies even to printed records, which should be prepared on acid-free paper and stored appropriately to ensure their longevity. Digital records pose three questions: 1) which records should be retained, 2) how and 3) for how long? As noted in previous chapters, some parliaments prepare interim text records that are published online within an hour or two and then replaced with more current versions until the final edition is released. There is little value in retaining these interim records except possibly for a short period of time if necessary to ensure accuracy and to serve as a limited backup.

The long term preservation of the final version of *digital text records* depends on formatting that is independent of specific hardware and software, which, given the pace of technological change, often become obsolete within a few years. For this reason, this handbook again emphasizes the importance of the use of open standards, in particular XML, in preparing all legislative documents. This is an especially critical requirement for parliaments that decide to rely on the digital version of any parliamentary record as the official version. Otherwise, these records are at risk of becoming inaccessible within a relatively short time.

The preservation of audio and video records using open standard formats is a greater technical challenge. Also, these formats require substantial storage and bandwidth capacity that may not be feasible for all parliaments. For these reasons, some parliaments currently limit the number of years of audio and video records that will be retained. This issue is a relatively new one, however, and experience with these types of records as well as technical advances may lead to different approaches in the future.

## Management Considerations

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The publication and subsequent preservation phases involve management issues, including staff skills and funding, that reflect policy issues and related technology matters. Because publication may involve the web, organizational responsibilities must also be considered.

### STAFF SKILLS

Policy decisions regarding what the official record of proceedings will be, what formats to publish, when to publish, and what to preserve will determine the staff skills required for this phase. If a printed record is the only form of publication, then the primary need is for staff who can format the document for printing. These skills could be held by staff in several different offices, including the office of official reporters, the information office, the IT office, or the printing organization. A close working relationship

between those who capture, prepare, and format the report and those who print it is important to ensure the efficiency of this process. These same types of formatting skills are needed if the record is published on the website. Staff with additional technical skills will be needed if the parliament decides to stream audio or video records of proceedings and to establish an archive of these records and make them available for listening or viewing on-demand.

Preservation of records requires a different set of skills, which will vary according to the format or formats being retained. The specific knowledge needed will depend on whether the staff member is responsible for establishing and managing the policies and procedures for preservation or for carrying out the technical tasks.

## **ORGANIZATIONAL RESPONSIBILITIES**

The methods selected for publishing will affect organizational responsibilities. Even if a parliament decides that a paper edition of the record of proceedings is the official version, this handbook recommends that a digital version be made available on the legislature's website. This will require the assignment of clear responsibilities to 1) those tasked with the preparation of each of these versions, 2) those tasked with printing the record, and 3) those tasked with managing the website. It will also require significant cooperation among each of these groups and between them and the ICT office. These organizational responsibilities become more complex if an audio and/or video record of the proceedings is made available. Staff with additional technical skills will be required and coordination among the various offices will be even more essential. Finally, staff members will need the knowledge and skills to ensure the preservation of the formats in which the record is published.

For these reasons this handbook recommends that parliaments consider a coordinating committee in which the organizational units responsible for producing and publishing the various versions of the record of proceedings are represented at the working level. The effort required to produce an accurate record of proceedings by a specific deadline on a day-to-day basis whenever the parliament meets will present numerous challenges. Even with well-thought out and tested procedures in place, the need for effective working relationships among different organizational units is essential for ensuring an efficient operation and finding timely solutions to the problems that will inevitably arise. While higher level officials will set the goals and standards for the publication of the record of proceedings, a coordinating committee of staff members who have the responsibility and the skills to carry out these mandates is vital for success.

## **FUNDING**

Policy decisions about what formats to publish, what deadlines have to be met, and what needs to be preserved all have implications for funding. Costs will vary, depending on salary scales for parliamentary staff and the state of technology and the technical industry within each country. Improvements in the efficiency and cost effectiveness of ICT, however, continue to lower the cost barriers for all parliaments that want to make use of basic or even advanced technologies for their daily operations. The various technical options considered in this handbook should enable most parliaments to meet the fundamental recommendations put forth here: a digital text record of proceedings that can be put on the parliament's website within a day after the meeting. Because the variability in resources and in the cost of operations among parliaments is considerable, no specific cost models or estimates are presented in this handbook. But the statement that the fundamental standards for records of proceedings could be met by most parliaments is given some credence by the fact that over 90 percent of parliaments worldwide already have websites and the fact that a number of parliaments in developing countries, some of them cited in this handbook, have already achieved this basic standard. More advanced systems, such as audio and

video streaming and on-demand viewing will become increasingly feasible for parliaments as costs continue to decline, as high speed networks become more affordable, and as experience with the most efficient techniques grows.

## Technical Options

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The publication phase involves several technical options, each involving its own issues and solutions. These include printing on paper, publishing documents on the website, and audio and/or video streaming. An example of the range of possibilities can be seen in Box 6.1, which contains a description of the publication systems in place in the Chamber of Deputies of Brazil.

### **Box 6.1: Chamber of Deputies of Brazil publishing systems**

All the information is published online and the website always has the most up-to-date information. Before the meeting, the agenda is posted on the website. During the session, the proceedings are broadcast on the website, FM radio station and cable TV station of the Chamber.

The verbatim records are published just after the meeting. Also published are the attendance records and the voting records and results, as well as the audio and video recordings. The verbatim reports include the speeches in two versions: full texts and summaries. As the text is revised, the intermediate versions are immediately made available online, so the changes can be fully audited. The intermediate versions are deleted after 3 months. The verbatim records since 2001 are available online and searchable in full text and by metadata. The records from 1945 are available as scanned images and searchable by metadata.

The various pieces of the full report of a session are automatically collated and formatted into a single PDF document which is made available within two hours after the end of the session as the official report of the meeting.

All the information is posted on various sub-sites such as the Agenda page, the Plenary site, the Committees sites and the MPs' sites. Information can be retrieved using criteria such as the body (plenary or committee), the title of the meeting, the name of the speaker, or the date of the meeting. The system currently stores the metadata and text of more than 50,000 documents (proposals, amendments, minutes, summaries, and voting results) in MS Word, Open Office, PDF, and HTML formats.

Integration of all the information is currently a challenge, as the Chamber has different information systems for different types of data but they have to be published in an integrated manner on the website.

*Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop. European Parliament, Brussels, Belgium, 14-16 July 2010, pp. 23 <http://www.ictparliament.org/node/1535>*

## PRINTING

Printing paper editions of the record of proceedings is the oldest and most well established process for publishing the record of proceedings. There is relatively little that is unique to printing these records, other than the deadlines involved. Many parliaments, in fact contract with private companies for this work or rely on a government printing office. Printing can involve significant capital outlays for the basic

equipment. Outsourcing allows parliaments to benefit from economies of scale. This is often the best solution except in those cases in which the parliament's requirements for timely availability cannot be met. In those situations, it may be necessary, although expensive, for the legislature to become its own printer. Modern printing operations are normally able to work with documents prepared in a variety of formats, such as proprietary word processing formats, PDF, and open standards such as XML. The specific technical options for printing are outside the scope of this handbook, except to reiterate the value of preparing documents in open standards.

## PUBLISHING ON THE WEBSITE

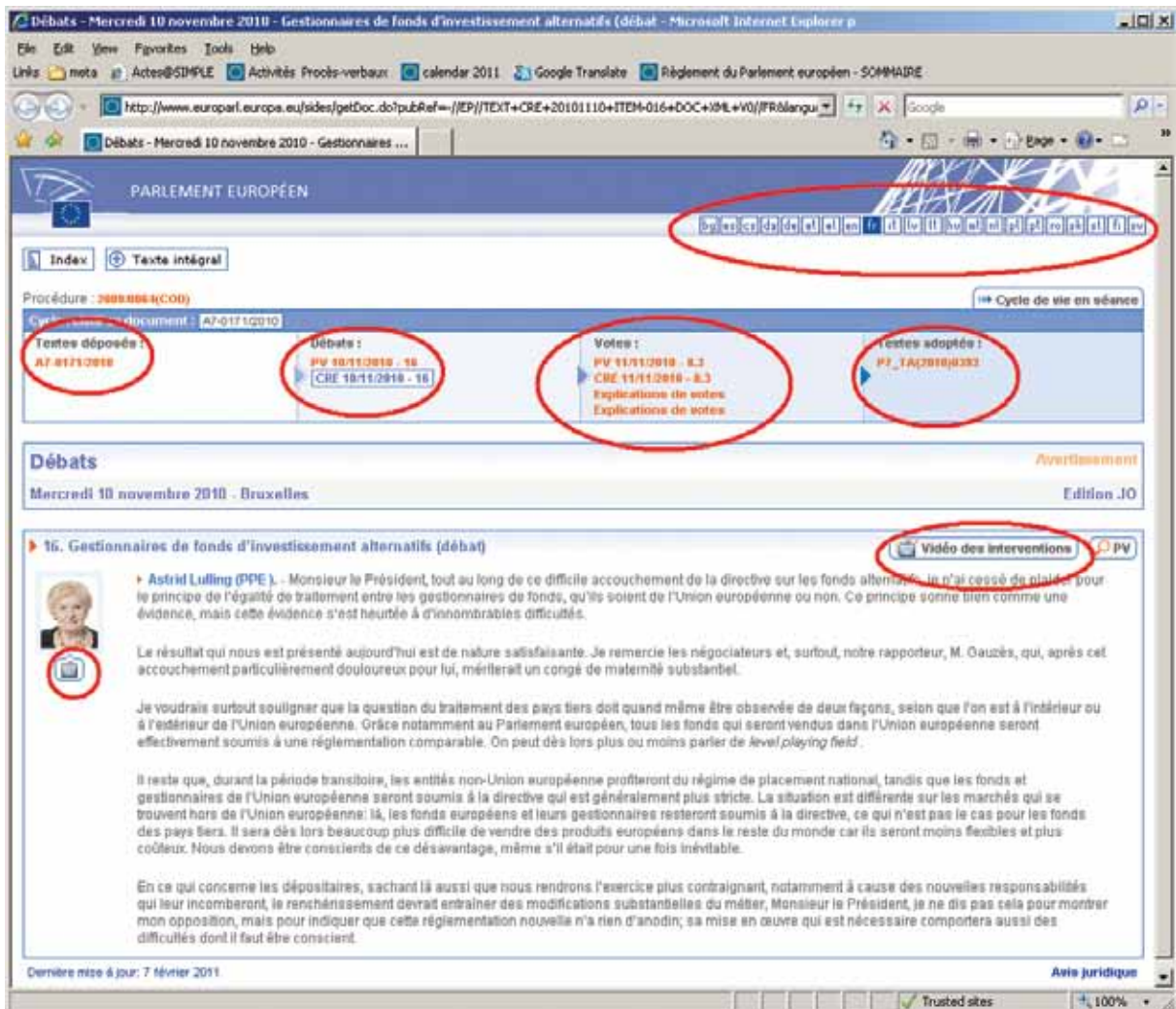
Publishing on the parliament's website entails several technical issues. First there is the question of **format**. Many parliaments publish documents online in PDF and/or HTML because these formats can be displayed by most web browsers. Advances in software have made it relatively easy to prepare documents in these formats once all the information is assembled and the components of the record can be collated. As noted in the previous chapter, workflow software can aid considerably in the coordination process. However, as also underscored in the previous chapter, it can take a significant effort to develop new software or to tailor existing software to meet the specific needs and accommodate the procedures of each parliament.

The workflow software should integrate readily with the editing software and with the backend database so that documents can be managed, updated, formatted, and backed up properly as automatically as possible. The workflow and supporting database should also enable the website to be updated automatically as soon as the appropriate official has authorized the record for publication.

Web publishing allows the record of proceedings to be linked to related documents such as the text of bills considered and votes taken. This is an important advantage of the web and should be utilized to the maximum extent possible so that users can readily find related information and material. Linking is particularly important when users find records by using commercial systems, such as Google or Microsoft's Bing, that are outside the parliament's website. The links shown in the displays can provide users with more complete information that may not be readily apparent in the search results shown by commercial systems.

A good example of this type of linking can be seen in Figure 6.2, which shows a statement by a member of the European Parliament. In this example, the text of the statement is shown in the middle of the screen; a picture of the member appears on the left. The circled items along the upper portion of the screen show links to the text being discussed, the rest of the debate of which this member's statement is a part, the votes, and the text as adopted by the plenary. The circled item on the right hand side is a link that takes the user to the video of the whole debate, while the circled item directly below the picture of the member provides a link to the video recording of her statement. Moreover, the row of icons circled at the top of the page allows switching between all the official languages (interpretation of the speeches and translation of the texts).

Figure 6.2: Statement by a member of the European Parliament with links to related documents, votes, and video



Related to linking is the need for a search capability on the parliament's own website. At a minimum, users should be able to find debate statements and records of debate by date, time, number of the plenary session, member, votes, procedural outcome, subject or issue, and bill or other document considered. These search elements depend not only on an adequate search engine but also on adequate tagging of the components of the record. It is for this reason that the capture and integration of metadata into the record, as discussed previously, is so important. Legislative information is very complex and a sophisticated level of tagging is one of the requirements for making search results useful and understandable.

Once a record of proceedings is available on the website, there are other means besides searching that enable users to find the most recent publication. Some parliaments issue **email alerts** to users who sign up for this type of service so that they can know when a record has been published or when a particular member has spoken or an issue debated. This requires close integration with the parliament's email service and its database system. Some parliaments also offer **RSS feeds**, which can be helpful to individual users or entities such as the media or civil society organizations who may monitor parliamentary activities throughout the day. This type of service requires the open standard markup language XML to be successfully implemented.

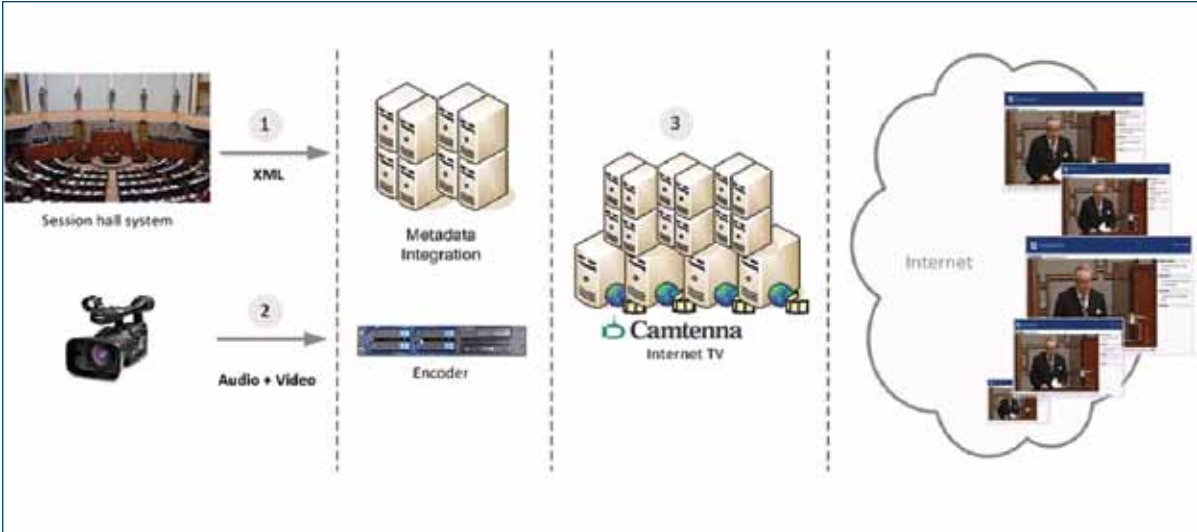


This handbook recommends that the website adheres as much as possible to the *Guidelines for Parliamentary Websites*, published by the Inter-Parliamentary Union in 2009, which contains recommendations for linking, searching, and alerting features as described above. A wide range of solutions for web content management systems (CMS), both commercial and open source, exists on the market and can meet the needs of most parliaments to publish their proceedings on their website. Nevertheless, special attention should be given to the flexibility of the CMS, whether externally procured or developed in-house, as it likely will require some customization in order to integrate with the workflow software and related databases (documents, metadata, etc). A content management system that supports an open standard such as XML will greatly facilitate such integration and is recommended for streamlining the process from capturing records of proceedings to their online publication.

**AUDIO AND VIDEO STREAMING**

Audio and video streaming and the availability of archives of sessions that can be heard or viewed on-demand currently present some of the most complex technical challenges. Figure 6.3 shows a representation of the video streaming system used by the Finnish Parliament. As this figure illustrates, the plenary hall must be equipped with cameras to capture the audio and video streams which are then encoded into digital formats and merged with metadata in XML. A commercial company provides the public with access over the Internet. Because of the bandwidth capacity that streaming video requires, it is not uncommon for parliaments to contract for this service.

Figure 6.3: Audio and video streaming in the Parliament of Finland



The capacity to capture metadata to support access to the video record and its integration with other elements of the proceedings, such as the verbatim text, is an important technical requirement. Box 6.2 illustrates the use of the metadata, generated in the previous steps of the transcription workflow, to index and make available videos on the website of the Senate of Belgium.

The example from the European Parliament shown in Figure 6.2, the Belgian Senate in Box 6.2, and the description from the U.S. House of Representatives in Box 6.3 illustrate the range of capabilities that parliaments are starting to add to their webcasting of both live proceedings and on-demand viewing from their archives. In summary these include linking the video and the text of statements, linking to the bills and votes shown in the video, allowing downloading by members of segments of speeches for posting on their website and Facebook pages, streaming to mobile devices, and adopting more open architectures.

### **Box 6.2: Metadata and video streaming in the Senate of Belgium.**

The RealVideo format is still used in the Senate as the main source for live streaming, archiving and video on demand. The video on demand system makes extensive use of the CourtSmart metadata, as well as additional metadata inserted manually, to allow the videos to be browsed and searched by speaker, subject matter, description or references. As for the live feeds, the CourtSmart metadata are not inserted directly in the videos, but are used to retrieve information from the databases with which the on-demand videos are tagged automatically, in the two official languages. Hyperlinks to background information on the subject or session are provided automatically. The time codes allow the user to directly access the segment of a video where a specific person is speaking or a subject matter being discussed.

*Technology Options for Capturing and Reporting Parliamentary Proceedings. Report of the Workshop. European Parliament, Brussels, Belgium, 14-16 July, 2010, p. 10 <http://www.ictparliament.org/node/1535>*

### **Box 6.3: U.S. House of Representatives streaming of video and audio.**

In 2010 the U.S. House of Representatives introduced “Houselive.gov”, a website designed to provide an additional avenue for members to reach their constituents. Since the 1970s the House has been broadcasting floor proceedings via a cable network known as CSPAN. The same video feed that the House provides to CSPAN is used for the Houselive feed. That television feed is passed through a video encoder and then streamed to the internet. There is a 30-45 second delay in the webcast. The goal is not only to provide streaming video but to make Houselive a single stop location where citizens can get all of the information needed about a day’s proceedings. To help achieve that goal, the House runs an integration process at the end of each legislative day that takes the closed captioning feed, which is provided for both the live feed and all archived records, and makes all of the words searchable. The site also links out to other systems, such as the Thomas system, for the text of legislation and the results of roll call votes. All points in the video are timestamped so that the user can go directly to specific moment in the proceedings. The user can turn the webcast on or off via buttons on the video player. Users can also share a link to the video using an option button and download either the MP3 (audio) or MP4 (video) recorded feed. The House also had its vendor convert all tapes from 2009 to digital format so that the entire two years of the 111<sup>th</sup> Congress would be available.

The House also developed an internal application to assist members’ offices in posting video clips to their individual member websites or Facebook pages. The application provides the members’ offices with tools that help them download the video and subscribe to RSS, audio or video Podcast feeds including iTunes. Recent enhancements include a version of the video clipping tool that works on both the “live” video broadcast and archived video broadcast. The tool was designed to be very simple to use: once the start and end points in the video are chosen, by pressing the download button the Member office can save the MP4 version of the video to the desktop. Future enhancements will include rewind and fast forward capability and viewing both streaming and archived video on mobile devices.

The current application that runs Houselive is Microsoft-based; however the vendor is moving away from the Microsoft-only architecture and will be able to support all of the major video formats such as HTML5, flash and H.264 standards.

## Preservation

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All official parliamentary records and documents should be preserved and their permanent accessibility assured. As noted above, the basic principles for preserving printed and digital documents apply to records of proceedings just as they do to bills, committee reports, etc. Best practices for archiving audio and video formats are continuing to evolve and it will be some time before detailed recommendations can be made.

Preservation is an issue of increasing importance as more parliaments systematically capture and publish their plenary and committee proceedings in multiple formats. Given the evolving nature of the technology, a practice which this handbook recommends is the establishment of a working group with staff from all departments and units that have any responsibility for the preparation and publication of reports of proceedings. The writ of such a working group would be to monitor technical developments related to preservation and to establish and oversee procedures whose purpose is to ensure long term access to reports of proceedings in all formats in which they are made available. The working group should be inclusive because the requirements for preservation are likely to involve all phases of the process, including techniques for the capture and transcription of proceedings as well as the techniques for publishing them. While members of this group may be the same as those in the operations coordinating committee proposed above, it will be important to ensure that it is clear when they are functioning in their operational role and when they are functioning in their preservation role.

The perspectives and experiences of three different parliaments – Italy, Brazil, and Indonesia – can be seen in the presentations made at the World e-Parliament Conference 2010 during the session on *The challenge of archiving parliamentary records in multiple formats*.<sup>26</sup> Although a thorough review of the current state of the technical means for archiving parliamentary records and documents are beyond the scope of this handbook, it is useful to list several of the key web resources that address these issues. See Box 6.4.

### Box 6.4: Digital preservation resources

1. Digital preservation - US Library of Congress: <http://www.digitalpreservation.gov/>  
On digital formats: <http://www.digitalpreservation.gov/formats/>
2. European Commission's Model Requirements for Electronic Records Management specification, (MoReq2): <http://www.cornwell.co.uk/edrm/moreq.asp>
3. The International Research on Permanent Authentic Records in Electronic Systems (InterPARES): <http://www.interpares.org/>
4. International standard IOS 14721 – Open archival information system – Reference model [http://www.iso.org/iso/iso\\_catalogue/catalogue\\_tc/catalogue\\_detail.htm?csnumber=24683](http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=24683)

## Summary

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The fourth stage is publication of the final version of the record of proceedings. This is the first release of an official version to members and the public. For most parliaments this currently involves a record printed on paper, although the growth of the Internet has led many to publish an online digital version and to provide, or consider providing, a live video stream and access to a video archive. Ensuring the preservation and permanent accessibility of the record in all its published formats is also an important requirement that needs to be addressed.

<sup>26</sup> See <http://www.ictparliament.org/node/1503>

Publication presents a number of policy issues beginning with which formats to publish and the designation of the official version if more than one format is made available. The question of the official version also involves determining the status and longevity of interim versions that may have been released. If there is more than one format, the issues of whether and how to link them needs to be resolved. In addition to making the report available in print and on the website, there is also the question of whether other methods of access should be provided, such as email alerts, RSS feeds, and bulk downloads for those outside the parliament who wish to make use of the report of proceedings in their own systems.

The timing of publication is an issue that must take into account the needs and expectations of members of parliament, the procedures and technology that are in place, and the rules of the chamber. Timing may differ depending on the format, the completeness of the version, and control of the printing service. This handbook recommends that a complete digital record of plenary proceedings be made available to members and the public no later than the day following the meeting. The rules of some parliaments may require a delay in the approval of this version as “official” but the technology exists to allow a complete, even if provisional, version to be published within this time frame. Reports of committee proceedings may take more time because of the need to gather related information to be included in the complete version.

Last are the policy issues involving permanent access and long term preservation. These in turn require answering the questions of what to preserve, how to do it, and for how long. These issues are complicated by the fact that the technology for preserving formats other than paper is not yet settled but continues to evolve. The most important things that parliaments can do with regard to this issue are to adopt open document and data standards and put in place a management team tasked with developing and overseeing procedures intended to ensure the goals of longer term access and preservation.

## Chapter 7

# CONCLUSIONS AND RECOMMENDATIONS

Information and communication technologies have continued to improve even as the global marketplace has made them less costly. ICT has reached the point where it is reasonable to conclude that with the necessary political will, parliaments now have technical options for capturing and reporting their proceedings for their members and the public on a timely basis. In addition, parliaments that already have systems in place can benefit from the information presented here regarding ways to enhance their existing operations. A rich base of knowledge and experience exists among the parliaments of the world and, if shared, can help all to improve the capacity to capture and report proceedings and hence to achieve greater transparency and accountability.

This section collects and summarizes the main guidelines and recommendations discussed throughout this handbook. They are organized into the following categories: policies, management and organization, technical options, and preservation.

## Policies

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### GENERAL POLICIES

***Establish policies, consistent with the goals and values of the parliament, that are needed to guide the process of capturing and reporting parliamentary proceedings. These include:***

1. The **format of the official record** and **other forms of publication** that will be provided;
2. Whether and how both **plenary and committee proceedings** will be reported;
3. What **audiences** will be served;
4. What **deadlines** for publication will be established;
5. If applicable, whether reports of proceedings will be available in **multiple languages**;
6. What **links** will be established between the reports of proceedings and other documents;
7. What **resources** will be made available for developing and supporting reporting activities and technologies.

### OFFICIAL RECORD OF PLENARY PROCEEDINGS

***The official record of plenary proceedings should be in text. As resources permit, records of proceedings should also be made available in audio and/or video formats.***

Text is currently easier to create, manage, access, and preserve and hence should be designated as the official legal record. Providing other means of access to improve transparency and accessibility should be considered as resources permit and when procedures and systems can be put in place to ensure a sustainable record in media other than text.

## REPORTS OF COMMITTEE PROCEEDINGS

***All committee meetings should have at least a text summary of proceedings in formats that allow them to be easily integrated with other parliamentary documents and information.***

Resources and the role of committees within parliaments are the key factors in determining whether verbatim reports of committee meetings are prepared. If, however, committees do have a role in the legislative and oversight functions of a parliament, a text summary of their proceedings, at a minimum, should be published in formats that enable them to be integrated with other parliamentary documents and processes.

## TIMELINESS OF PLENARY RECORDS

***An official digital record should be made available to legislators and the public on the parliament's website no later than the day following the meeting. If the rules of the chamber require formal approval of the record before it can be deemed official, and if such approval may not occur within a day after the meeting, then the preliminary or unofficial record should be available.***

The current state of the technology should enable most parliaments to publish a record of their proceedings in a digital format on their website at a time that they choose. If a parliament can provide a sufficient number of trained staff to capture and transcribe members' speeches and statements, record the actions taken, and review and correct the report, there are several technical options described in this handbook that would enable a parliament to provide a digital record of proceedings by the deadline recommended here. See Annex I for a discussion of staffing requirements for meeting this recommendation.

## TIMELINESS OF REPORTS OF COMMITTEE MEETINGS

***No specific recommendation.***

Not all parliaments publish reports of committee meeting, especially verbatim reports. Also, for a variety of reasons, most parliaments that do prepare records of committee meetings require more time to publish them. For these reasons, this handbook makes no recommendation at this time regarding a deadline for publishing records of committee meetings. However, parliaments that do publish records of committee proceedings may want to establish a deadline to support the goal of transparency by ensuring timely access.

## Management and Organization

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### COORDINATING COMMITTEE FOR OPERATIONS

***Establish a coordinating committee in which all the organizational units responsible for producing and publishing the various versions of the record of proceedings are represented at the working level.***

The policy decisions made and the technologies chosen to implement them will require the assignment of clear responsibilities to several different organizations within the secretariat. It will also require close cooperation among them and with the ICT department. The effort required to produce an accurate record of proceedings by a specific deadline on a day-to-day basis whenever

the parliament meets will present numerous challenges. A coordinating committee of staff members who have the responsibility and the skills to carry out these mandates can help to ensure success.

## **COORDINATING COMMITTEE FOR PRESERVATION**

***Establish a committee to ensure that procedures are developed and implemented to preserve reports and records of parliamentary proceedings.***

The technologies for preserving records, both in paper and in digital formats, continue to evolve. A committee that includes those with operational responsibilities as well as those with preservation responsibilities, such as librarians and archivists, should be established to monitor technical developments related to preservation and to establish and oversee procedures whose purpose is to ensure long term access to reports in all formats in which they are made available. Because operational requirements may conflict with preservation requirements, the two recommended committees should function independently but work closely together. They may even be composed of the same people; in such a case, however, it will be important to ensure that it is clear when they are functioning in their operational role and when they are functioning in their preservation role.

## **Technical Options**

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### **WORKFLOW, CONTENT MANAGEMENT, AND DATABASE MANAGEMENT SYSTEMS**

***Utilize workflow, content and/or document management systems to support all phases of the capturing and reporting process.***

Capturing, transcribing, processing, and publishing involve a significant number of steps and procedures to be followed as the records move through their various stages. Some parliaments manage these complex processes through a combination of workflow, content and database management software. Depending on their capabilities, these types of software can aid greatly in supporting the initial capture of proceedings through audio or stenographic means, allowing managers to assign specific segments of proceedings to individual reporters for transcription and adding metadata. These software systems can also store and track the various versions of the verbatim report as it is first drafted, corrected, and then edited. The most capable can also support the integration of related documents and records of legislative actions into the official report. Finally, they can support the publication of the report and its preservation.

### **CAPTURE OF PROCEEDINGS**

***Capture proceedings using audio AND/OR stenographic systems. Both should be supported by a system for capturing sound.***

The two primary methods for capturing statements are 1) computer-assisted stenography, in which reporters enter a sequence of letters and symbols that are converted almost simultaneously to full text, and 2) audio and/or video recording, which is converted to text in a subsequent phase by direct keying or by voice-to-text dictation. The stenographic method requires staff who have the necessary skills in this technology. Using audio records to transcribe text requires less technical skills. Both methods require staff who are knowledgeable about the legislative process. While the different methods are distinct, some of their functional capabilities are beginning to merge, which can allow parliaments to use a mixture of systems depending on the range of staff skills. Both

stenographic and audio recording systems should have a robust system of microphones, network support, and good file and database management systems.

## **TRANSCRIPTION SYSTEMS TO PRODUCE VERBATIM RECORDS**

***Create verbatim records of proceedings by transcribing audio records directly or through voice-to-text dictation software, or by using stenographic systems.***

There are three basic methods of creating the verbatim record: 1) typing on a stenographic machine which produces readable text based on shorthand code, 2) typing on a PC while listening to the audio record, and 3) listening to the audio record and then dictating into a voice-to-text system that is adapted to the reporter's voice to produce accurate text. Stenographic systems allow near real time availability of text. Typing from an audio record is the simplest of the technical options, requiring only the audio capture of the proceedings which reporters who are skilled typists can convert to text. If available in the language(s) of the parliament, voice-to-text dictation software, if used for converting one reporter's spoken words into text, can be effective and provide a high rate of accuracy.

## **SUPPORT FOR MULTIPLE PUBLICATION FORMATS**

***Develop systems that can support multiple publication formats – print and digital text at a minimum, and audio and video if and when resources permit – within short deadlines.***

Publication provides the release of the first official version of the report to members of parliament and the public. The format is an important issue. The most basic format is a text record printed on paper in multiple copies. However, as the internet becomes increasingly accessible in more countries, and as advances in mobile technology continue, the online digital version of the text should have equal priority, especially because it is more flexible and can be available sooner. Consideration should be given to eventually making it the official version. Such a step, however, will require the implementation of systems for improving security and for ensuring the authenticity, preservation, and permanent accessibility of the record. Advances in technology provide other publishing options, including audio and video live streaming, and audio and video archives which can be viewed on-demand.

## **TECHNICAL INFRASTRUCTURE**

***Develop a technical infrastructure that provides the hardware, software, networks and communication systems plus user support needed for all phases of the capturing and reporting process.***

Capturing and reporting are complex processes. In addition to appropriate policies and capable management structures, they require adequate technical systems and timely user support. The systems themselves, however, do not have to be highly sophisticated; they simply need to be sufficient to do the tasks. The requirements for these systems are well known and their components are widely available in the global marketplace. The technology which is needed can be used for several different parliamentary functions. In addition the technology benefits from the continuing improvement in the cost effectiveness of ICT world-wide.



## Preservation

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***Policies, procedures, and systems need to be put in place to ensure permanent access to the proceedings of the parliament. Particular emphasis should be placed on using open document and data standards for all records.***

Ensuring long term (and easy) access requires determining what to preserve, how to do it, and for how long. While these issues are complicated by the fact that the technology for preserving formats other than paper continues to evolve, this should not deter parliaments from putting the essential policies, procedures, and systems in place and adjusting them when necessary as the technology changes. The most important things that parliaments can do with regard to this issue is to adopt open document and data standards and put in place a management team tasked with developing and overseeing procedures intended to ensure the goals of access and preservation.



# *Annex I*

## ESTIMATING STAFFING REQUIREMENTS

The recommendation in this handbook regarding the timeliness of plenary records (see section 7.1.4) states the following:

***An official digital record should be made available to members and the public on the parliament’s website no later than the day following the meeting. If the rules of the chamber require formal approval of the record before it can deemed official, and if such approval may not occur within a day of the meeting, then the preliminary or unofficial record should be available.***

The current state of the technology should enable most parliaments to publish a record of their proceedings in a digital format on their website at a time that they choose. If a parliament can provide a sufficient number of trained staff to capture and transcribe members’ speeches and statements, record the actions taken, and review and correct the report, there are several technical options described in this handbook that would enable a parliament to provide a digital record of proceedings by the deadline recommended here.

Because the document focuses on technology, it does not discuss in detail the question of what constitutes adequate staffing. However, it is important to note that without sufficient staffing even the most advanced technology will not enable a parliament to meet the goal of having a digital record of the proceedings available by the next day.

Staffing needs will vary based on the policies of the parliament regarding editing standards, the average length of a sitting, the languages used, and other factors. The following is offered as general guideline for estimating staffing needs for preparing an edited record of most proceedings.<sup>27</sup> However, significant variations may arise among parliaments based on their policies and practices and on the skill level of the reporters and editors. (As used below, a “take” is the number of minutes a reporter is required to transcribe.)

- A single 10-minute take will require approximately one hour for transcription and first level editing. First level editing involves such things as typing corrections to the text, applying appropriate procedural headings, and checking the document for formatting. Verifying names may add to the time required for this stage.
- A second edit will require approximately three hours for each hour of recorded proceedings. This edit involves merging the takes into one file, rechecking the source (stenographic record or audio or video), correcting transcription errors and bringing the transcript in line with in-house reporting and style guidelines.
- The final tasks involve merging all takes into a single document and preparing the report for publication. The senior editor must then review and approve this final version. The time for

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<sup>27</sup> The estimates below are drawn from the experiences of the members of the Working Group and from a report prepared by Mr. Robert Sutherland, Acting Director of Hansard Production, Legislative Assembly of British Columbia.

completing these tasks will vary depending on the technology used to prepare the complete record for publication and the standards applied by the senior editor. The technical tasks related to preparation for publication should normally be done within half a day. Policies may allow the senior editor to release a digital version for Members that is identified as “draft” or “unofficial” pending final review and editing.

In addition to reporters and editors, technical staff who maintain the systems used to produce reports of proceedings are also essential members of the team. These individuals must be knowledgeable not only about the technology but also about the legislative process and the nature of the work of reporters and editors. They must also be available to troubleshoot when the reporters and editors are doing their work, which can mean during hours other than a typical business work day.

A number of other considerations will also affect the time required for to produce a publishable version. Legislative debates and amendment processes will typically take longer to transcribe and edit than free-form speeches on non-legislative topics. A final version can be produced more quickly if there is a sufficient number of staff at each phase so that copy can be moved from the reporter to the editor to the senior editor and then to the printer than if everything must be completed at each stage before moving to the next. And allowing Members to review before publication always adds to the time needed.

The priority given to reports of plenary proceedings versus committee meetings is also important. Most parliaments give first priority to plenary and establish more generous deadlines for committee reports. A few parliaments have also taken the step of not printing paper versions of some reports, which reduces the overall reporting workload as well as costs.

Finally, it is essential to note the importance of both initial and ongoing training for reporters, editors, and technical staff. Policy issues are in constant flux and reporters and editors must keep abreast of the topics and the language used to discuss them. They must also be alert to possible changes in legislative procedures and practices, and they must keep current with changes in the technology used for reporting. The same requirements apply to the ICT staff who support the process.

## *Annex 2*

# QUESTIONNAIRE

## Technological Options for Capturing and Reporting Plenary and Committee Sessions in Parliament

There is a general lack of knowledge regarding the range of technologies being used for capturing and reporting parliamentary proceedings; the benefits and drawbacks of each approach; the appropriateness of each technology in a specific context, taking into account differences in income level, language and culture among countries; and the opportunities for bi-lateral or multi-lateral cooperation that exist, regardless of the development level of each parliament.

The main objective of this questionnaire is to gather information about the various technologies and processes currently in use for capturing and reporting plenary and committee proceedings in order to provide parliaments with an overview of the state of the art in this domain. The results of the survey will be of significant benefit to the world community of parliaments as it increasingly seeks to use technology to enhance institutional effectiveness, transparency and accountability.

The survey has a total of 47 questions divided into five numbered sections. The questions relate to verbatim records (not summaries or minutes) and to audio and video recordings of proceedings. While some of the questions may appear redundant, their objective is to allow for a crosscheck among some of the answers and to support a more detailed analysis of the responses. It is estimated that the questionnaire will require approximately 20 minutes to complete.

The Global Centre for ICT in Parliament greatly appreciates your cooperation in completing this survey. Data will be kept by the Global Centre and not shared with other institutions or groups. In its analyses the Global Centre will not single out any parliament or chamber or use data for ranking or for making specific judgments.

Comments on the questionnaire and recommendations for its improvement are most welcome.

**Respondent**

**Date:** / /

Name: .....

Position: .....

Country: .....

House: .....

E-mail: .....

Answers are given for:

Unicameral parliament

Lower house

Upper house

Both houses (Lower and Upper houses)

**I. Capturing audio and video records of proceedings**

**I.0A Does the Parliament capture audio records of plenary proceedings?**

Yes, all  Yes, some  No

**I.0B Does the Parliament capture video records of plenary proceedings?**

Yes, all  Yes, some  No

**I.0C Does the Parliament capture audio records of committee proceedings?**

Yes, all  Yes, some  No

**I.0D Does the Parliament capture video records of committee proceedings?**

Yes, all  Yes, some  No

**I.1 What technologies are used for capturing audio and/or video records of plenary proceedings? Check all that apply.**

- |                 |                          |                  |                          |
|-----------------|--------------------------|------------------|--------------------------|
| a) Analog audio | <input type="checkbox"/> | b) Digital audio | <input type="checkbox"/> |
| c) Analog video | <input type="checkbox"/> | d) Digital video | <input type="checkbox"/> |
| e) Other        | <input type="checkbox"/> | f) None          | <input type="checkbox"/> |

If other, please describe: \_\_\_\_\_

**I.2 What technologies are used for capturing audio and/or video records of committee proceedings? Check all that apply.**

- |                 |                          |                  |                          |
|-----------------|--------------------------|------------------|--------------------------|
| a) Analog audio | <input type="checkbox"/> | b) Digital audio | <input type="checkbox"/> |
| c) Analog video | <input type="checkbox"/> | d) Digital video | <input type="checkbox"/> |
| e) Other        | <input type="checkbox"/> | f) None          | <input type="checkbox"/> |

If other, please describe: \_\_\_\_\_

**I.3 How does the parliament/chamber capture audio and/or video records of plenary proceedings? Check all that apply.**

- |                                   |                          |  |                          |
|-----------------------------------|--------------------------|--|--------------------------|
| a) Digital video recording device | <input type="checkbox"/> | b) Digital audio recording device                  | <input type="checkbox"/> |
| c) Analog video recording device  | <input type="checkbox"/> | d) Analog audio recording device                   | <input type="checkbox"/> |
| e) Recording servers              | <input type="checkbox"/> | f) Central recording facility<br>(production room) | <input type="checkbox"/> |
| g) Local Area Network (LAN)       | <input type="checkbox"/> | h) Other   | <input type="checkbox"/> |

If other, please describe: \_\_\_\_\_

**I.4 How does the parliament/chamber capture audio and/or video records of committee proceedings? Check all that apply.**

- |                                   |                          |  |                          |
|-----------------------------------|--------------------------|--|--------------------------|
| a) Digital video recording device | <input type="checkbox"/> | b) Digital audio recording device                  | <input type="checkbox"/> |
| c) Analog video recording device  | <input type="checkbox"/> | d) Analog audio recording device                   | <input type="checkbox"/> |
| e) Recording servers              | <input type="checkbox"/> | f) Central recording facility<br>(production room) | <input type="checkbox"/> |
| g) Local Area Network (LAN)       | <input type="checkbox"/> | h) Other   | <input type="checkbox"/> |

If other, please describe: \_\_\_\_\_

**I.5 What storage devices or systems are used by the parliament/chamber for audio and/or video records of plenary proceedings? Check all that apply.**

- |                        |                          |  |                          |
|------------------------|--------------------------|--|--------------------------|
| a) Tapes/cassettes     | <input type="checkbox"/> | b) VHS tapes/cassettes                   | <input type="checkbox"/> |
| c) Compact Disks (CDs) | <input type="checkbox"/> | d) DVDs                                  | <input type="checkbox"/> |
| e) Memory cards        | <input type="checkbox"/> | f) Centralized enterprise storage system | <input type="checkbox"/> |
| g) Servers             | <input type="checkbox"/> | h) Other                                 | <input type="checkbox"/> |

If other, please describe: \_\_\_\_\_

**I.6 What storage devices or systems are used by the parliament/chamber for audio and/or video records of committee proceedings? Check all that apply.**

- |                        |                          |  |                          |
|------------------------|--------------------------|--|--------------------------|
| a) Tapes/cassettes     | <input type="checkbox"/> | b) VHS tapes/cassettes                   | <input type="checkbox"/> |
| c) Compact Disks (CDs) | <input type="checkbox"/> | d) DVDs                                  | <input type="checkbox"/> |
| e) Memory cards        | <input type="checkbox"/> | f) Centralized enterprise storage system | <input type="checkbox"/> |
| g) Servers             | <input type="checkbox"/> | h) Other                                 | <input type="checkbox"/> |

If other, please describe: \_\_\_\_\_

**I.7 What formats are used by the parliament/chamber to capture audio and/or video records of plenary proceedings? Check all that apply.**

- |          |                          |         |                          |
|----------|--------------------------|---------|--------------------------|
| a) VHS   | <input type="checkbox"/> | b) MP3  | <input type="checkbox"/> |
| c) MP4   | <input type="checkbox"/> | d) AVI  | <input type="checkbox"/> |
| e) WMV   | <input type="checkbox"/> | f) MPEG | <input type="checkbox"/> |
| g) FLV   | <input type="checkbox"/> | h) MOV  | <input type="checkbox"/> |
| i) Other | <input type="checkbox"/> | j) None | <input type="checkbox"/> |

If other, please describe: \_\_\_\_\_

**I.8 What formats are used by the parliament/chamber to capture audio and/or video records of committee proceedings? Check all that apply.**

- |          |                          |         |                          |
|----------|--------------------------|---------|--------------------------|
| a) VHS   | <input type="checkbox"/> | b) MP3  | <input type="checkbox"/> |
| c) MP4   | <input type="checkbox"/> | d) AVI  | <input type="checkbox"/> |
| e) WMV   | <input type="checkbox"/> | f) MPEG | <input type="checkbox"/> |
| g) FLV   | <input type="checkbox"/> | h) MOV  | <input type="checkbox"/> |
| i) Other | <input type="checkbox"/> | j) None | <input type="checkbox"/> |

If other, please describe: \_\_\_\_\_

**1.9 What is the total number of staff (full time equivalents) directly involved in recording and managing audio and video of plenary and committee proceedings?  
Skip if not applicable**

- a) Less than 10                       b) Between 10 -20   
c) Between 20 - 30                       d) Between 30 - 40   
e) Between 40 - 50                       f) More than 50   
g) Other  If other, please describe: \_\_\_\_\_

**1.10 What software or applications are used to manage audio and/or video records of plenary and committee proceedings?**

Please, describe: \_\_\_\_\_

**2. Preparing verbatim records**

**2.0A Does the Parliament prepare verbatim records of plenary proceedings?**

Yes, all                       Yes, some                       No

**2.0B Does the Parliament prepare verbatim records of committee proceedings?**

Yes, all                       Yes, some                       No

**2.1 Are any of the following used for preparing verbatim records of plenary proceedings? Check all that apply.**

- a) Hand stenography (Shorthand)                       b) Digital stenography using a dedicated device (machine shorthand)   
c) Dictation (voice recognition)                       d) Stenotyping using a typewriter-style stenographic machine (analog)   
e) Computer with regular keyboard                       f) Computer with a stenography keyboard   
g) Other                       h) None

If other, please describe: \_\_\_\_\_

**2.2 Are any of the following used for preparing verbatim records of committee proceedings? Check all that apply.**

- a) Hand stenography (Shorthand)                       b) Digital stenography using a dedicated device (machine shorthand)   
c) Dictation (voice recognition)                       d) Stenotyping using a typewriter-style stenographic machine (analog)   
i) Computer with regular keyboard                       j) Computer with a stenography keyboard   
e) Other                       f) None

If other, please describe: \_\_\_\_\_



**2.3 Does the parliament maintain text, audio or video records of plenary or committee proceedings in open standard formats?**

	Plenary Proceedings		Committee Proceedings	
	Yes	No	Yes	No
Audio records				
Video records				
Text records				

If yes to any of the above, please list the format(s) used for each type of records:

---

**2.4 Is XML used to markup text of verbatim proceedings or to markup metadata of audio or video records of plenary or committee proceedings?**

	Plenary Proceedings		Committee Proceedings	
	Yes	No	Yes	No
Audio records				
Video records				
Text records				

If yes, please describe: \_\_\_\_\_

**2.5 Is there a process for synchronizing the verbatim text records with audio and video records of plenary and committee proceedings?**

	Plenary Proceedings		Committee Proceedings	
	Yes	No	Yes	No
Audio records				
Video records				

If yes, please describe: \_\_\_\_\_

**2.6 Does the parliament provide subtitles or closed captioning of video records of plenary and committee proceedings?**

Plenary: a) Yes  b) No

Committee: c) Yes  d) No

If yes, please describe: \_\_\_\_\_

**2.7 Are subtitles or closed captioning of video records prepared by the reporting office?**

Plenary: a) Yes  b) No

Committee: c) Yes  d) No

If the reporting office does not prepare the closed captioning, please indicate who does:

---

**2.8 If the country has more than one official language, are the transcripts of plenary and committee proceedings translated into other national/official languages? Skip if not applicable.**

Plenary: a) Yes  b) No

Committee: c) Yes  d) No

If yes, please describe: \_\_\_\_\_

**2.9 Are the plenary and committee records of proceedings (audio, video or text) linked to the specific legislative actions to which they relate?**

	Plenary Proceedings		Committee Proceedings	
	Yes	No	Yes	No
Audio records				
Video records				
Text records				

**3. Processing and managing verbatim records**

**3.1 Is there a software system to automatically allocate tasks among reporters and manage the workflow of recording and transcription of plenary and committee proceedings?**

Plenary: a) Yes  b) No

Committee: c) Yes  d) No

If yes, please describe which software: \_\_\_\_\_

**3.2 What is the average number of plenary sitting hours per year?**

a) Less than 100 hours  b) Between 100 -200 hours

c) Between 200 – 300 hours  d) Between 300 – 400 hours

e) Between 400 – 500 hours  f) More than 500 hours

g) Other  If other, please, specify: \_\_\_\_\_

**3.3 What is the average number of total committee sitting hours per month?**

a) Less than 100 hours  b) Between 100 -200 hours

c) Between 200 – 300 hours  d) Between 300 – 400 hours

e) Between 400 – 500 hours  f) More than 500 hours

g) Other  If other, please specify: \_\_\_\_\_

**3.4 What is the average number of consecutive minutes that a reporter/stenographer works in capturing plenary proceedings?**

- a) Less than 5 minutes       b) Between 5 -10 minutes   
c) Between 10 – 15 minutes       d) Between 15 – 20 minutes   
e) Between 20 – 25 minutes       f) More than 25 minutes   
g) Other  If other, please, specify: \_\_\_\_\_

**3.5 What is the average number of consecutive minutes that a reporter/stenographer works in capturing committee proceedings?**

- a) Less than 5 minutes       b) Between 5 -10 minutes   
c) Between 10 – 15 minutes       d) Between 15 – 20 minutes   
e) Between 20 – 25 minutes       f) More than 25 minutes   
 If other, please, specify: \_\_\_\_\_

**3.6 Are the verbatim records of the speeches delivered at the plenary and committee sittings given to MPs for proofreading or revision?**

Plenary:      a) Yes       b) No

Committee:      c) Yes       d) No

If yes, what kinds of corrections are allowed? Please specify: \_\_\_\_\_

**3.7 Is there a deadline for MPs to correct the verbatim records of the speeches delivered at plenary and committee sittings?**

Plenary:      a) Yes       b) No

Committee:      c) Yes       d) No

If yes, please specify how many hours or days: \_\_\_\_\_

**3.8 Do MPs need to approve the verbatim records of their speeches before they are published on the website?**

Plenary:      a) Yes       b) No

Committee:      c) Yes       d) No

If yes, please describe: \_\_\_\_\_

**3.9 Do MPs need to approve the verbatim records of their speeches before they are printed?**

Plenary:      a) Yes       b) No

Committee:      c) Yes       d) No

If yes, please describe: \_\_\_\_\_

**3.10 What is the total number of staff (full time equivalents) responsible for preparing and processing verbatim records of plenary and committee proceedings?**

- a) Less than 10  b) Between 10 -20   
c) Between 20 - 30  d) Between 30 - 40   
e) Between 40 - 50  f) More than 50   
g) Other  If other, please describe : \_\_\_\_\_

**4. Publishing plenary and committee records**

**4.0A Does the Parliament publish plenary proceedings on the parliamentary website?**

Yes  No

**4.0B Does the Parliament publish committee proceedings on the parliamentary website?**

Yes  No

**4.0C Does the Parliament publish plenary proceedings in papers?**

Yes  No

**4.0D Does the Parliament publish committee proceedings in paper?**

Yes  No

**4.1 In what format(s) are the plenary proceedings published on the Parliamentary website? Check all that apply.**

- a) Text  b) Only audio   
c) Audio and video  d) None

**4.2 In what format(s) are the committee proceedings published on the Parliamentary website? Check all that apply.**

- a) Text  b) Only audio   
c) Audio and video  d) None

**4.3 What is the average time between the plenary sitting and the publication of the verbatim records of the plenary proceedings on the website?**

- a) Less than 6 hours  b) Between 6 – 12 hours   
c) Between 12 – 24 hours  d) Between 1 - 2 days   
e) Between 2 – 3 days  f) Between 3 days - 1 week   
g) Between 1 – 2 weeks  h) Between 2 – 3 weeks   
i) Between 3 – 4 weeks  j) More than one month   
k) Other  If other, please describe: \_\_\_\_\_

**4.4 What is the average time between the plenary sitting and the publication of the verbatim records of the plenary proceedings in paper?**

- a) Less than 6 hours
- b) Between 6 – 12 hours
- c) Between 12 – 24 hours
- d) Between 1 - 2 days
- e) Between 2 – 3 days
- f) Between 3 days - 1 week
- g) Between 1 – 2 weeks
- h) Between 2 – 3 weeks
- i) Between 3 – 4 weeks
- j) More than one month

If other, please describe: \_\_\_\_\_

**4.5 What is the average time between the committee sitting and the publication of the verbatim records of the committee proceedings on the website?**

- a) Less than 6 hours
- b) Between 6 – 12 hours
- c) Between 12 – 24 hours
- d) Between 1 - 2 days
- e) Between 2 – 3 days
- f) Between 3 days - 1 week
- g) Between 1 – 2 weeks
- h) Between 2 – 3 weeks
- i) Between 3 – 4 weeks
- j) More than one month

If other, please describe: \_\_\_\_\_

**4.6 What is the average time between the committee sitting and the publication of the verbatim records of the committee proceedings in paper?**

- a) Less than 6 hours
- b) Between 6 – 12 hours
- c) Between 12 – 24 hours
- d) Between 1 - 2 days
- e) Between 2 – 3 days
- f) Between 3 days - 1 week
- g) Between 1 – 2 weeks
- h) Between 2 – 3 weeks
- i) Between 3 – 4 weeks
- j) More than one month

If other, please describe: \_\_\_\_\_

**4.7 Are the records of the plenary or committee proceedings made available in XML or other open standard formats?**

	Plenary Proceedings		Committee Proceedings	
	Yes	No	Yes	No
Audio records				
Video records				
Text records				

If yes, please describe: \_\_\_\_\_

**4.8 Does the parliament/chamber provide audio/video on-demand of the plenary and committee proceedings?**

	Plenary Proceedings		Committee Proceedings	
	Yes	No	Yes	No
Audio records				
Video records				

If yes, please describe: \_\_\_\_\_

**4.9 Is there a search engine for finding the audio, video or text records of parliamentary proceedings?**

	Plenary Proceedings		Committee Proceedings	
	Yes	No	Yes	No
Audio records				
Video records				
Text records				

If yes, please describe: \_\_\_\_\_

**4.10 Is there a content management system (CMS) for making the audio, video or text of proceedings available on the website?**

	Plenary Proceedings		Committee Proceedings	
	Yes	No	Yes	No
Audio records				
Video records				
Text records				

If yes, please describe: \_\_\_\_\_

**5. General**

**5.1 Is the technology for capturing, preparing, managing or publishing of plenary and committee proceedings supported by a database management system (DBMS)?**

	Plenary		Committee	
	Yes	No	Yes	No
Capturing audio and/or video records				
Preparing verbatim records				
Processing and Managing verbatim records				
Publishing records				

If yes, please describe: \_\_\_\_\_

**5.2A Does the parliament prepare other documents regarding plenary sessions?**

- a) Summaries       b) Minutes   
 c) Reports       d) None   
 e) Other

If other, please describe: \_\_\_\_\_

**5.2B Does the parliament prepare other documents regarding committee sessions?**

f) Summaries  g) Minutes

h) Reports  i) None

j) Other

If other, please describe: \_\_\_\_\_

**5.3 Please, give any additional details about the process of capturing and reporting proceedings in the parliament that would be useful for others to understand:**

Please describe: \_\_\_\_\_

**5.4 Please, give any comments about this questionnaire for its future improvement:**

Please describe: \_\_\_\_\_

## *Annex 3*

# **PARLIAMENTS AND CHAMBERS THAT PARTICIPATED IN THE SURVEY *Technological Options for Capturing and Reporting Plenary and Committee Sessions in Parliament (CRPCSP)***

### **National**

1. Algeria, Council of the Nation
2. Antigua and Barbuda, Parliament\*
3. Armenia, National Assembly
4. Azerbaijan, National Assembly
5. Belgium, Senate
6. Belgium, House of Representatives
7. Bosnia and Herzegovina, Parliamentary Assembly\*
8. Brazil, Chamber of Deputies
9. Cambodia, Senate
10. Cambodia, National Assembly
11. Cameroon, National Assembly
12. Canada, Senate
13. Colombia, House of Representatives
14. Croatia, Croatian Parliament
15. Czech Republic, Senate
16. Dominican Republic, Chamber of Deputies
17. Egypt, People's Assembly
18. Estonia, The Estonian Parliament
19. France, Senate
20. France, National Assembly
21. Georgia, Parliament
22. Germany, Federal Council
23. Grenada, Parliament\*
24. Guatemala, Congress of the Republic
25. Guyana, National Assembly
26. Honduras, National Congress
27. Israel, Parliament
28. Italy, Senate
29. Italy, Chamber of Deputies



30. Kenya, National Assembly
31. Lesotho, Senate
32. Lithuania, Parliament
33. Malawi, National Assembly
34. Mauritius, National Assembly
35. Mexico, Chamber of Deputies
36. Morocco, House of Councillors
37. Morocco, House of Representatives
38. Netherlands, House of Representatives
39. Paraguay, Chamber of Deputies
40. Poland, Senate
41. Portugal, Assembly of the Republic
42. Republic of Moldova, Parliament
43. Romania, Chamber of Deputies
44. Serbia, National Assembly
45. Slovenia, National Assembly
46. South Africa, Parliament\*
47. Sri Lanka, Parliament
48. Sudan, Council of States
49. Sudan, National Assembly
50. Suriname, National Assembly
51. The former Yugoslav Republic of Macedonia, Assembly of the Republic
52. Swaziland, Parliament\*
53. Sweden, Parliament
54. Switzerland, Federal Assembly\*
55. Tunisia, Chamber of Deputies
56. Ukraine, Parliament
57. United Kingdom of Great Britain and Northern Ireland, Parliament\*
58. United Republic of Tanzania, National Assembly
59. Uruguay, Senate
60. Uruguay, House of Representatives
61. Vietnam, National Assembly

### **Regional**

62. European Parliament
63. Pan African Parliament

\*Bicameral parliaments that answered as one entity due to their organizational structure

## *Annex 4*

# **SELECTED RESULTS OF THE SURVEY** *Technological Options for Capturing and Reporting Plenary and Committee Sessions in Parliament (CRPCSP)*

This annex presents selected results from the questionnaire *Technological Options for Capturing and Reporting Plenary and Committee Sessions in Parliament (CRPCSP)*. The questions from the survey that are included here are shown along with a table or a graph that displays the percentage of respondents that chose each of the possible responses. Percentages are computed either on the basis of the 63 chambers that completed the survey or on the basis of those that answered a specific question. The method for calculating the percentages are noted for each of the results shown here.

In many cases the same question was asked regarding both plenary and committee proceedings. For the convenience of the reader the results from these questions are presented together in the same figure. It is not, however, the purpose of these presentations to provide a detailed analysis of the differences between plenary and committee meetings except to note, as is reflected in these figures, that somewhat fewer parliaments employ the full range of technical options for capturing and reporting committee sessions compared to plenary sessions. In some parliaments this may be caused by differences in the roles and responsibilities of committees; in others it may reflect resource constraints and the higher priority given to plenary events.

The three questions in the survey that dealt with open standards yielded results that were inconsistent with each other<sup>28</sup>. Nevertheless, in the spirit of full transparency, the results from these questions are presented here so that readers can make their own assessment. It is possible that the questions were worded poorly or that respondents did not fully comprehend what was being asked.

The countries represented by the chambers that responded to this survey have income levels (as measured by the World Bank) that are similar to nearly all countries that have parliamentary bodies. Because income level has such a strong relationship to the use of technology in legislatures<sup>29</sup>, the Global Centre for ICT in Parliament regards the findings shown here to be representative of parliaments throughout the world.

The results from the survey provide baseline data that will be useful in future studies. They illustrate the variety of means that parliaments use to capture and report proceeding, and some of the findings are noted in the document when they illustrate specific points or recommendations made in the text. However, a more detailed analysis of the results is not presented here because it is not the aim of this handbook to provide an assessment of the current state of capturing and reporting proceedings, but rather to provide recommendations for improving the capacity of parliaments to carry out this vital task.

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28 2.3, 2.4 and 4.7

29 See the *World e-Parliament Report 2008, 2010 and 2012* at [www.ictparliament.org](http://www.ictparliament.org).

## I. Capturing audio and video records of proceedings

### Questions I.0 A-D

**I.0 A-B: Does the Parliament capture audio / video records of plenary proceedings?**

**I.0 C-D: Does the Parliament capture audio / video records of committee proceedings?**

Figure 1: Capturing audio and video records of plenary and committee proceedings

	Audio of plenary proceedings*	Video of plenary proceedings	Audio of committee proceedings**	Video of committee proceedings**
Yes, all	98%	83%	78%	25%
Yes, some		3%	17%	22%
No	2%	14%	5%	52%

Source: Survey CRPCSP, Questions I.0A, I.0B, I.0C and I.0D.

Percentages based on 63 chambers.

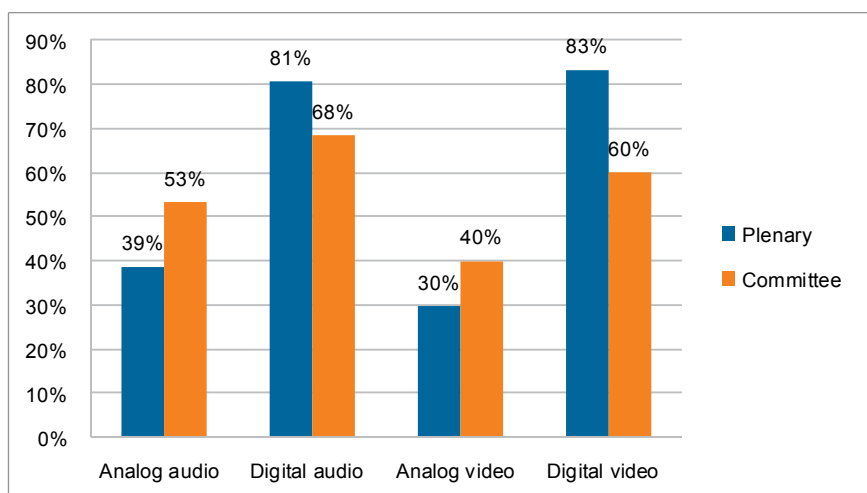
\* One chamber indicated that it captured video of plenary proceedings, which implies audio, but did not check audio

\*\* Three chambers do not capture audio or video of committee proceedings

### Questions I.1-I.2

**What technologies are used for capturing audio and/or video records of plenary/committee proceedings? Check all that apply.**

Figure 2: Technologies used to capture audio and video records of proceeding



Source: Survey CRPCSP, Questions I.1 and I.2.

Percentages are based on those chambers that capture audio or video of plenary or committee proceedings. See Figure 1 for percentages.

Number that capture "All" or "Some": Plenary: Audio=62 (98%); Video=54 (86%); Committees: Audio=60 (95%); Video=30 (48%)

### Questions 1.3-1.4

**How does the parliament/chamber capture audio and/or video records of plenary/committee proceedings? Check all that apply.**

Figure 3: Methods for capturing audio and video records

	Plenary	Committees
Digital video recording device	53%	23%
Digital audio recording device	65%	56%
Analog video recording device	26%	14%
Analog audio recording device	37%	44%
Recording servers	50%	29%
Central recording facility	44%	21%
Local Area Network (LAN)	32%	21%
Other	0%	5%

Source: Survey CRPCSP, Questions 1.3 and 1.4.

Percentages are based on 63 chambers that capture audio or video of plenary proceedings and 60 chambers that capture audio or video of committee proceedings.

### Questions 1.5-1.6

**What storage devices or systems are used by the parliament/chamber for audio and/or video records of plenary/committee proceedings? Check all that apply.**

Figure 4: Storage devices or systems used for audio and video records

	Plenary	Committees
Tapes/cassettes	44%	48%
VHS tapes/cassettes	19%	7%
Compact Disks	33%	23%
DVDs	51%	27%
Memory cards	17%	22%
Centralized storage	41%	28%
Servers	71%	52%
Other	8%	3%

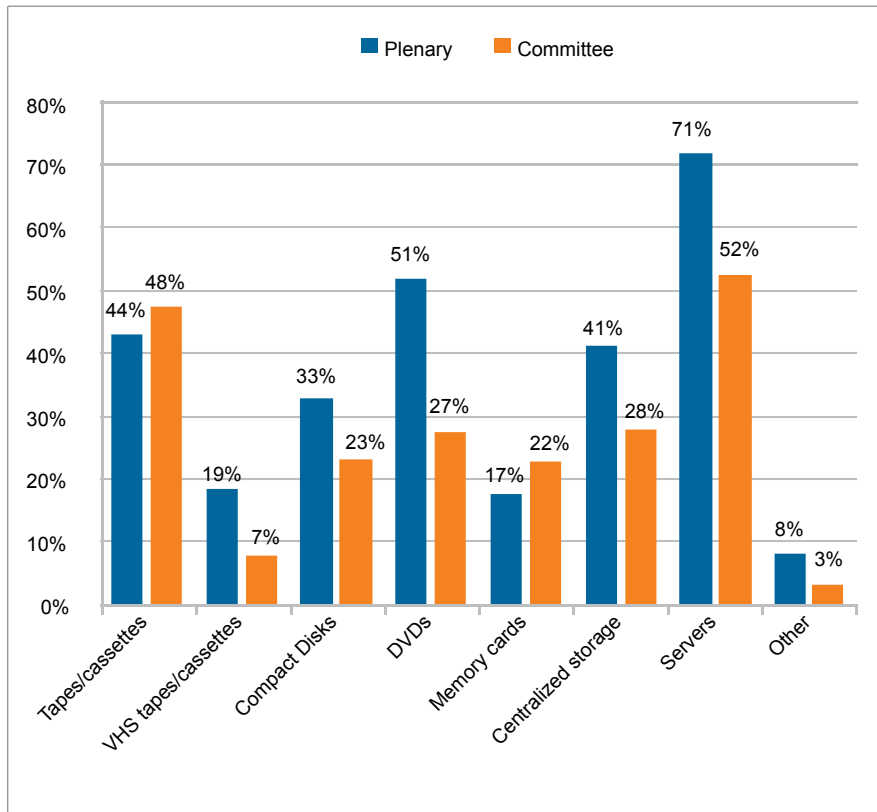
Source: Survey CRPCSP, Questions 1.5 and 1.6.

Percentages are based on 63 chambers that capture audio or video of plenary proceedings and 60 chambers that capture audio or video of committee proceedings.

### Questions 1.7-1.8

What formats are used by the parliament/chamber to capture audio and/or video records of plenary/committee proceedings? Check all that apply.

Figure 5: Formats used for capturing audio and video records



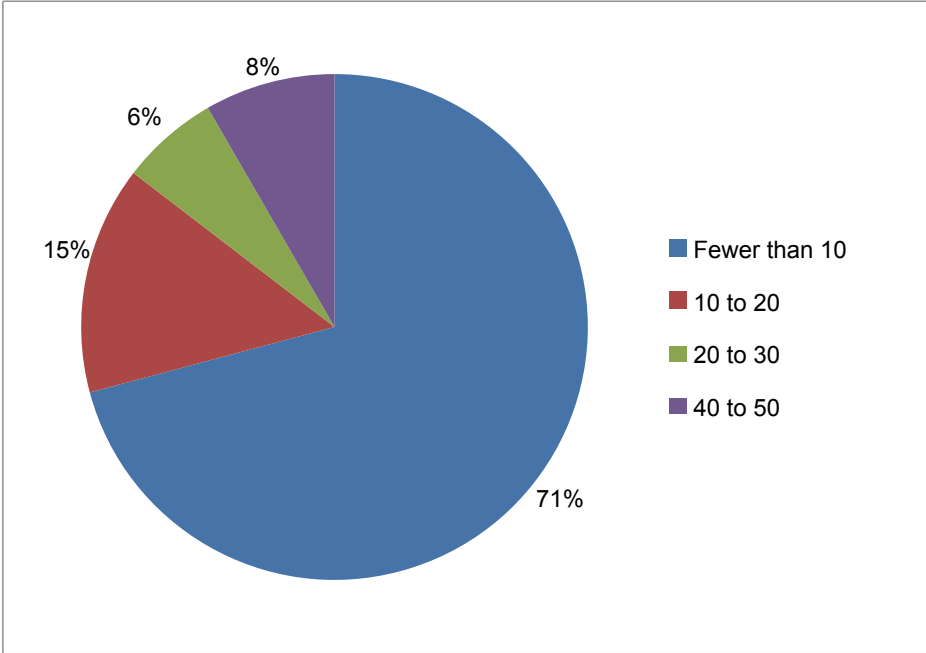
Source: Survey CRPCSP, Questions 1.7 and 1.8.

Percentages are based on 63 chambers that capture audio or video of plenary proceedings and 60 chambers that capture audio or video of committee proceedings.

**Question 1.9**

**What is the total number of staff (full time equivalents) directly involved in recording and managing audio and video of plenary and committee proceedings?**

Figure 6: Total number of staff (full time equivalents) directly involved in recording and managing audio and video of plenary and committee proceedings



Source: Survey CRPCSP, Question 1.9.  
Percentages based on 63 chambers.

## 2. Preparing verbatim records

### Questions 2.0 A-B

**Does the Parliament prepare verbatim records of plenary / committee proceedings?**

Figure 7: Parliaments preparing verbatim records of plenary and committee proceedings

	Plenary	Committee
Yes, all	98%	62%
Yes, some	2%	24%
No	0%	14%

Source: Survey CRPCSP, Questions 2.0A and 2.0B  
 Percentages based on 63 chambers.

### Questions 2.1-2.2

**Are any of the following used for preparing verbatim records of plenary proceedings?  
 Check all that apply.**

Figure 8: Methods used to prepare verbatim records

	Plenary	Committee
Hand stenography (shorthand)	41%	41%
Digital stenography using a dedicated device (machine shorthand)	8%	6%
Dictation (voice recognition)	14%	11%
Stenotyping using a typewriter-style stenographic machine (analog)	3%	7%
Computer with regular keyboard	70%	72%
Computer with stenography keyboard	5%	0%
Other	10%	7%

Source: Survey CRPCSP, Questions 2.1 and 2.2.  
 Percentages are based on the number of chambers that reported that they prepare verbatim records of “All” or “Some” plenary sessions (63) and committee meetings (54).

### Question 2.3<sup>30</sup>

**Does the parliament maintain text, audio or video records of plenary or committee proceedings in open standard formats?**

Figure 9: Use open standard formats

	Plenary: audio records	Plenary: video records	Plenary: text records	Committees: audio records	Committees: video records	Committees: text records
Yes	54%	44%	70%	43%	17%	51%
No	44%	41%	30%	52%	30%	35%
Number responding	62	54	63	60	30	54

Source: Survey CRPCSP: Question 2.3.

Percentages based on the number of chambers responding to the question (see row 3).

### Question 2.4

**Is XML used to markup text of verbatim proceedings or to markup metadata of audio or video records of plenary or committee proceedings?**

Figure 10: Use XML

	Plenary: audio records	Plenary: video records	Plenary: text records	Committees: audio records	Committees: video records	Committees: text records
Yes	26%	30%	25%	15%	18%	13%
No	74%	70%	75%	85%	82%	88%
Number responding	34	27	44	27	11	32

Source: Survey CRPCSP: Question 2.4.

Percentages based on the number of chambers responding to the question (see row 3).

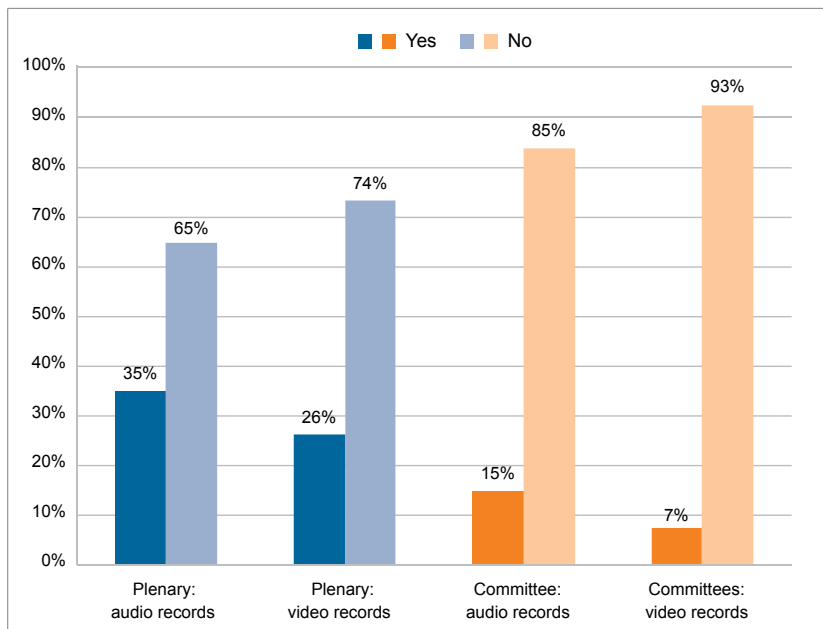
30 As noted in the introduction, the three questions in the survey that dealt with open standards yielded results that were inconsistent with each other. These include questions 2.3 and 2.4. Nevertheless, in the spirit of full transparency, the results from these questions are presented here so that readers can make their own assessment. It is possible that the questions were worded poorly or that respondents did not fully comprehend what was being asked.



### Question 2.5

**Is there a process for synchronizing the verbatim text records with audio and video records of plenary and committee proceedings?**

Figure 11: Synchronization of text records with audio and video records



Source: Survey CRPCSP: Question 2.5.

Plenary records: audio N=62 (98%); video N=54 (86%);

Committee records: N=54 audio (86%); video N=27 (43%)

### Question 2.6

**Does the parliament provide subtitles or closed captioning of video records of plenary and committee proceedings?**

Figure 12: Closed captioning provided for video

	Plenary	Committees
Yes	20%	13%
No	80%	87%
Number responding	54	30

Source: Survey CRPCSP: Question 2.6.

Percentages based on the number of chambers responding to the question (see row3).

### Question 2.7

**If subtitles or closed captioning of video records are provided, are they prepared by the reporting office? Skip if not applicable.**

Figure 13: Preparation of closed captioning by the reporting office

	Plenary	Committees
Yes	55%	50%
No	45%	50%
Number responding	11	4

Source: Survey CRPCSP: Question 2.7.

Percentages based on the number of chambers responding to the question (see row3).

### Question 2.8

If the country has more than one official language, are the transcripts of plenary and committee proceedings translated into other national/official languages? Skip if not applicable.

Figure 14: Translation of transcripts of proceedings into other official languages, when the country has more than one official language

	Plenary	Committees
Yes	36%	32%
No	64%	68%
Number responding	39	31

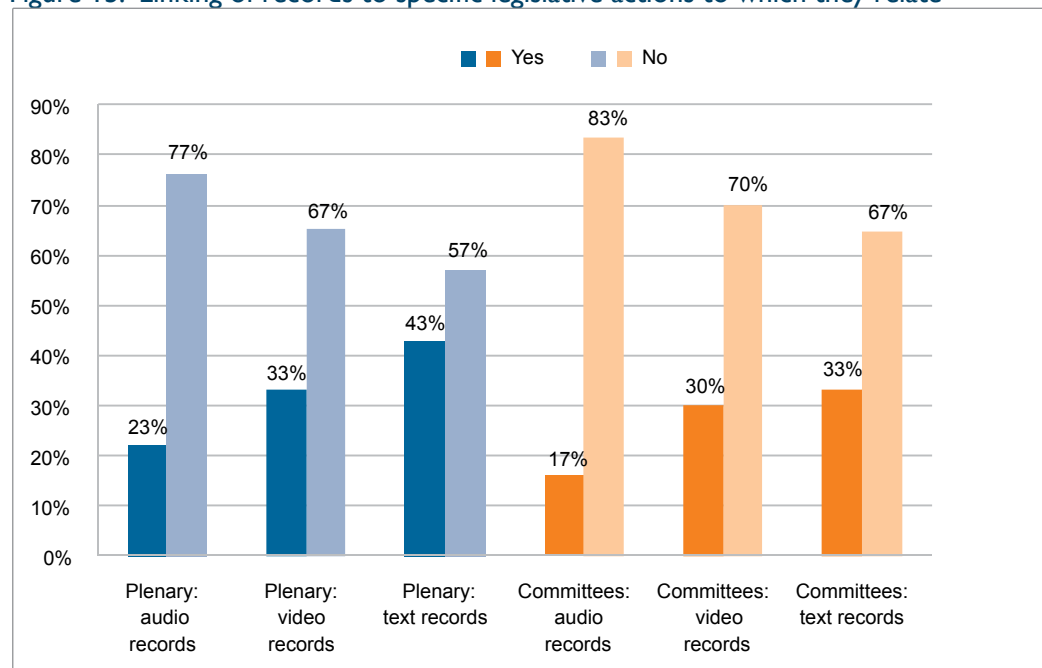
Source: Survey CRPCSP: Question 2.8

Percentages based on the number of chambers responding to the question (see row3).

### Question 2.9

Are the plenary and committee records of proceedings (audio, video or text) linked to the specific legislative actions to which they relate?

Figure 15: Linking of records to specific legislative actions to which they relate



Source: Survey CRPCSP: Question 2.9.

Percentages based on those who responded to the question.

Plenary records: audio N=62 (98%); video N=54 (86%); text N=63 (100%).

Committee records: N=60 audio (95%); video N=30 (48%); text N=54 (86%).

### 3. Processing and managing verbatim records

#### Question 3.1

Is there a software system to automatically allocate tasks among reporters and manage the workflow of recording and transcription of plenary and committee proceedings?

Figure 16: Software used to manage workflow

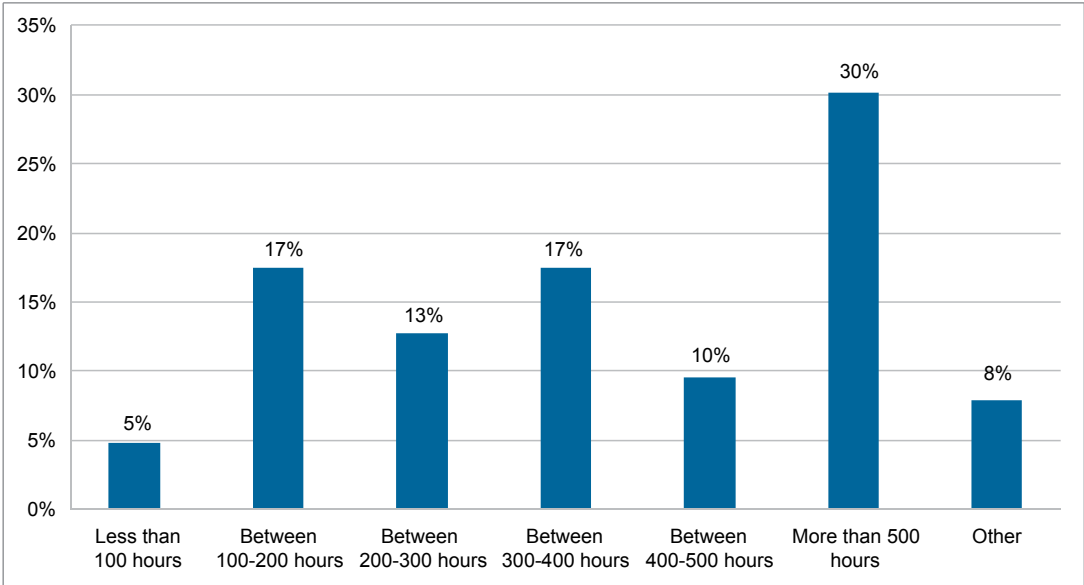
	Plenary	Committees
Yes	40%	28%
No	60%	72%
Number responding	63	54

Source: Survey CRPCSP, Question 3.1.  
 Percentages based on the number of chambers responding to the question (see row3).

#### Question 3.2

What is the average number of plenary sitting hours per year?

Figure 17: Average number of plenary sitting hours per year

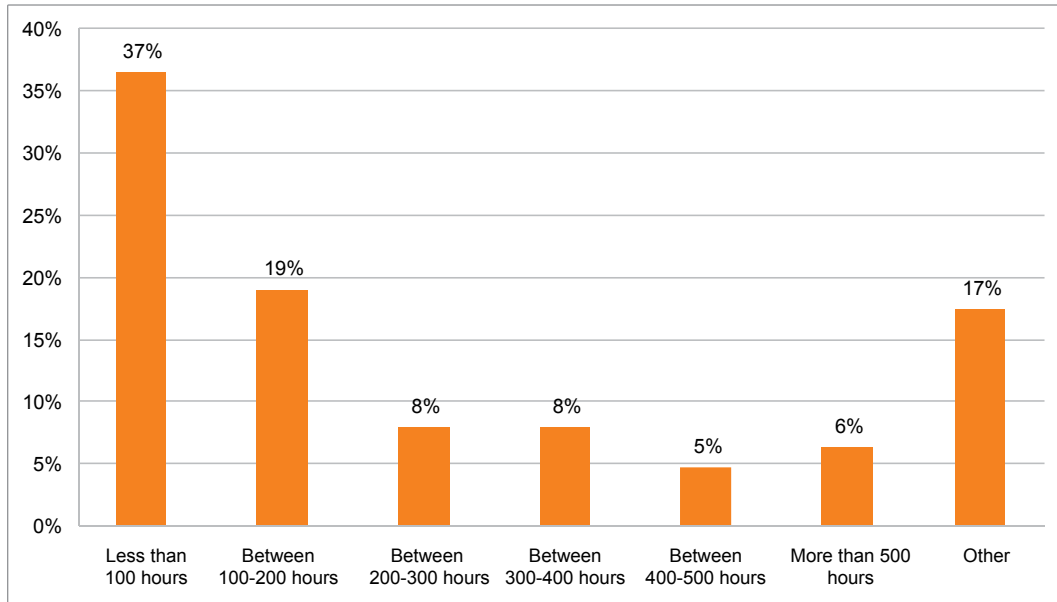


Source: Survey CRPCSP, Question 3.2.  
 Percentages based on 63 chambers.

### Question 3.3

**What is the average number of total committee sitting hours per month?**

Figure 18: Average number of total committee sitting hours per month

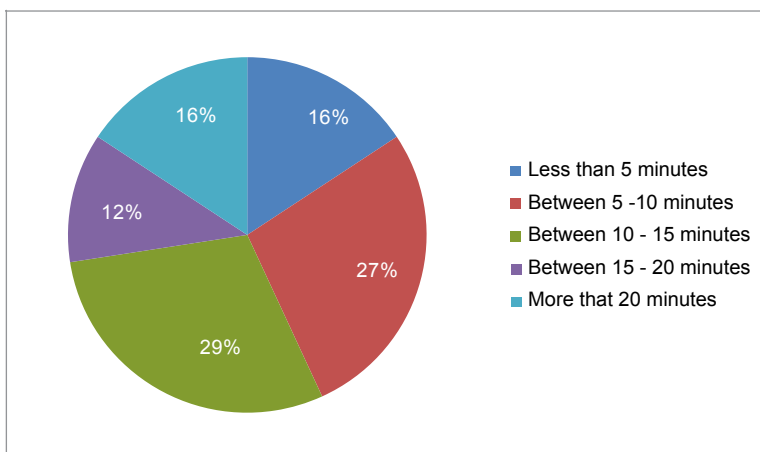


Source: Survey CRPCSP, Question 3.3.  
Percentages based on 63 chambers.

### Question 3.4

**What is the average number of consecutive minutes that a reporter/stenographer works in capturing plenary proceedings?**

Figure 19: Average number of consecutive minutes that a reporter/stenographer works in capturing plenary proceedings

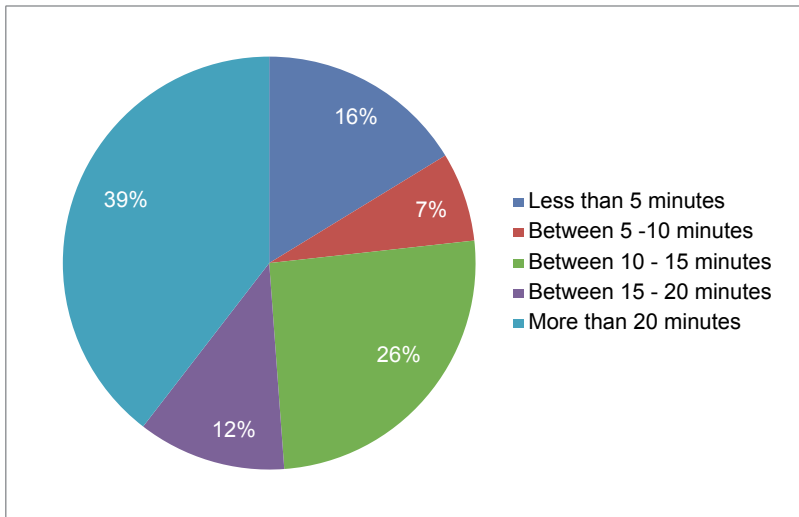


Source: Survey CRPCSP, Question 3.4.  
Based on responses by 51 chambers; 63 chambers responded and those selecting response “Others” (12) were not included in the figure.

### Question 3.5

**What is the average number of consecutive minutes that a reporter/stenographer works in capturing committee proceedings?**

Figure 20: Average number of consecutive minutes that a reporter/stenographer works in capturing *committee* proceedings



Source: Survey CRPCSP, Question 3.5

Based on responses by 43 chambers; 54 chambers responded and those selecting response “Others” (11) were not included in the figure.

### Question 3.6

**Are the verbatim records of the speeches delivered at the plenary and committee sittings given to members of parliament for proofreading or revision?**

Figure 21: Members of parliament are allowed to revise verbatim record

	Plenary	Committees
Yes	59%	43%
No	41%	57%
Number responding	63	54

Source: Survey CRPCSP, Question 3.6.

Percentages based on the number of chambers responding to the question (see row3).

### Question 3.7

**Is there a deadline for members of parliament to correct the verbatim records of the speeches delivered at plenary and committee sittings?**

Figure 22: Deadline for members of parliament to correct verbatim records

	Plenary	Committees
Yes	65%	37%
No	35%	63%
Number responding	62	54

Source: Survey CRPCSP, Question 3.7.

Percentages based on the number of chambers responding to the question (see row3).

### Question 3.8

**Do MPs need to approve the verbatim records of their speeches before they are published on the website?**

Figure 23: Approval by members of verbatim records before publishing on the website

	Plenary	Committees
Yes	16%	13%
No	84%	87%
Number responding	50	39

Source: Survey CRPCSP, Question 3.8.

Percentages based on the number of chambers responding to the question (see row3).

### Question 3.9

**Do members of parliament need to approve the verbatim records of their speeches before they are printed?**

Figure 24: Approval by members of verbatim records before printing

	Plenary	Committees
Yes	24%	19%
No	76%	81%
Number responding	62	54

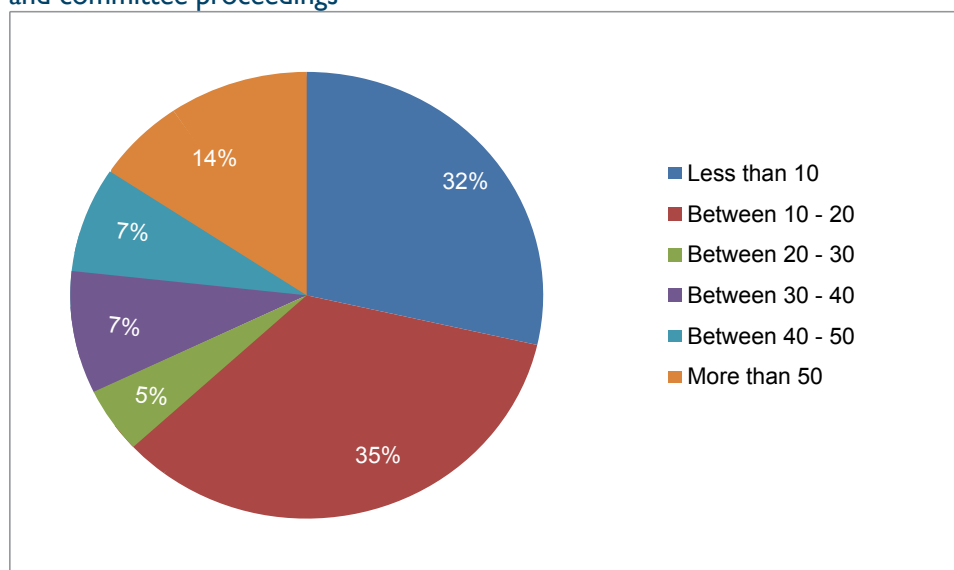
Source: Survey CRPCSP, Question 3.9.

Percentages based on the number of chambers responding to the question (see row3).

### Question 3.10

**What is the total number of staff (full time equivalents) directly involved in recording and managing audio and video of plenary and committee proceedings? Skip if not applicable**

Figure 25: Total number of staff responsible for preparing and processing verbatim records of plenary and committee proceedings



Source: Survey CRPCSP, Question 3.10.

Based on responses by 57 chambers; 63 chambers responded and those selecting response “Others” (6) were not included in the figure.

## 4. Publishing plenary and committee records

### Question 4.0 A-D

**4.0 A–B: Does the Parliament publish plenary /committee proceedings on the parliamentary website?**

**4.0 C-D: Does the Parliament publish plenary /committee proceedings in papers?**

Figure 26: Mode of publication of parliamentary proceedings

	On Website	In Paper
Plenary proceedings	83%	76%
Committee proceedings	51%	49%

Source: Survey CRPCSP, Questions 4.0A, 4.0B, 4.0C and 4.0D.  
Percentages based on 63 chambers responding.

### Questions 4.1-4.2

**In what format(s) are the plenary/committee proceedings published on the Parliamentary website? Check all that apply.**

Figure 27: Formats of publication of proceedings on the website

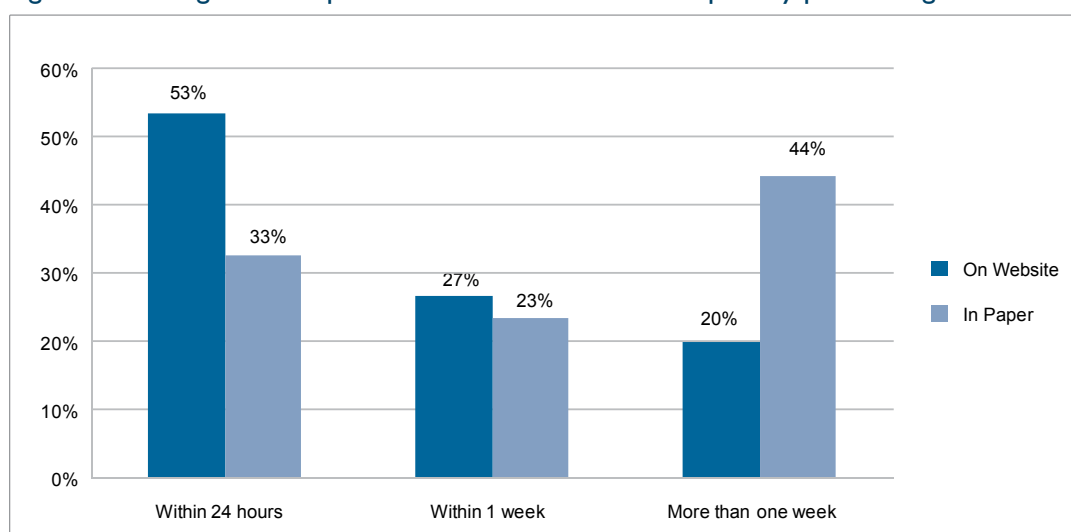
	Plenary	Committees
Text	94%	91%
Only audio	10%	22%
Audio and video	48%	34%
Number responding	52	32

Source: Survey CRPCSP, Questions 4.1 and 4.2.  
Percentages based on the number of chambers responding to the question (see row4).

### Questions 4.3-4.4

**What is the average time between the plenary sitting and the publication of the verbatim records of the plenary proceedings on the website / in paper?**

Figure 28: Average time to publish verbatim records of the plenary proceedings

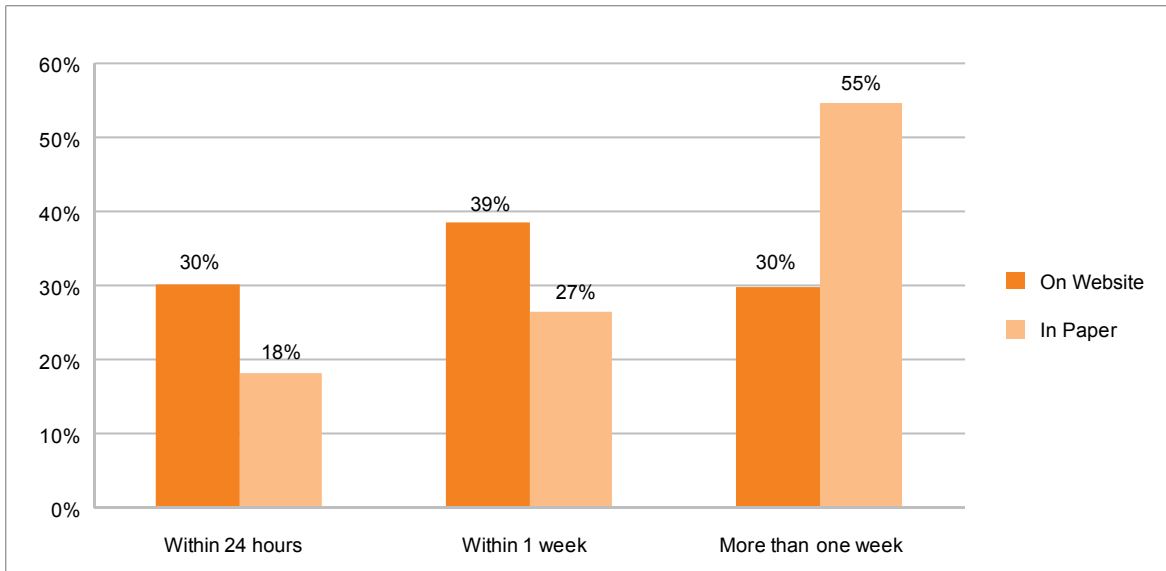


Source: Survey CRPCSP, Questions 4.3 and 4.4.  
Based on responses by chambers responding less than those responding “Other”:  
Website: 52 responded, 7 responded “Other”, N=45 (71%)  
Paper: 48 responded, 5 responded “Other”, N=43 (68%)

**Questions 4.5-4.6**

**What is the average time between the committee sitting and the publication of the verbatim records of the committee proceedings on the website / in paper?**

Figure 29: Average time to publish verbatim records of the committee proceedings



Source: Survey CRPCSP, Questions 4.5 and 4.6.

Based on responses by chambers responding less those responding “Other”:

Website: 31 responded, 8 responded “Other”, N=23 (37%)

Paper: 29 responded, 7 responded “Other”, N= 22 (35%)

**Question 4.7**

**Are the records of the plenary or committee proceedings made available in XML or other open standard formats?**

Figure 30: Records made available in XML

	Plenary: audio records	Plenary: video records	Plenary: text records	Committees: audio records	Committees: video records	Committees: text records
Yes	16%	20%	34%	9%	24%	28%
No	84%	80%	66%	91%	76%	72%
Number responding	55	49	56	53	25	47

Source: Survey CRPCSP: Question 4.7.

Percentages based on the number of chambers responding to the question (see row3).



#### Question 4.8

**Does the parliament/chamber provide audio/video on-demand of the plenary and committee proceedings?**

Figure 31: Provision of audio/video on-demand of the plenary and committee proceedings

	Plenary: audio records	Plenary: video records	Committees: audio records	Committees: video records
Yes	5%	27%	6%	14%
No	3%	13%	5%	3%
Number responding	5	25	7	11

Source: Survey CRPCSP, Questions 4.8.

The number of respondents to this question was so small that all respondents (N=63) was used as the denominator

#### Question 4.9

**Is there a search engine for finding the audio, video or text records of parliamentary proceedings?**

Figure 32: Search engine for finding records of parliamentary proceedings

	Plenary: audio records	Plenary: video records	Plenary: text records	Committees: audio records	Committees: video records	Committees: text records
Yes	3%	17%	60%	3%	10%	29%
No	5%	22%	17%	8%	8%	17%
Number responding	5	25	49	7	11	29

Source: Survey CRPCSP, Question 4.9.

The number of respondents to this question was so small that all respondents (N=63) was used as the denominator.

#### Question 4.10

**Is there a content management system (CMS) for making the audio, video or text of proceedings available on the website?**

Figure 33: Content management system (CMS) for making records available on the website

	Plenary: audio records	Plenary: video records	Plenary: text records	Committees: audio records	Committees: video records	Committees: text records
Yes	2%	22%	43%	3%	10%	19%
No	6%	17%	35%	8%	8%	27%
Number responding	5	25	49	7	11	29

Source: Survey CRPCSP, Question 4.10.

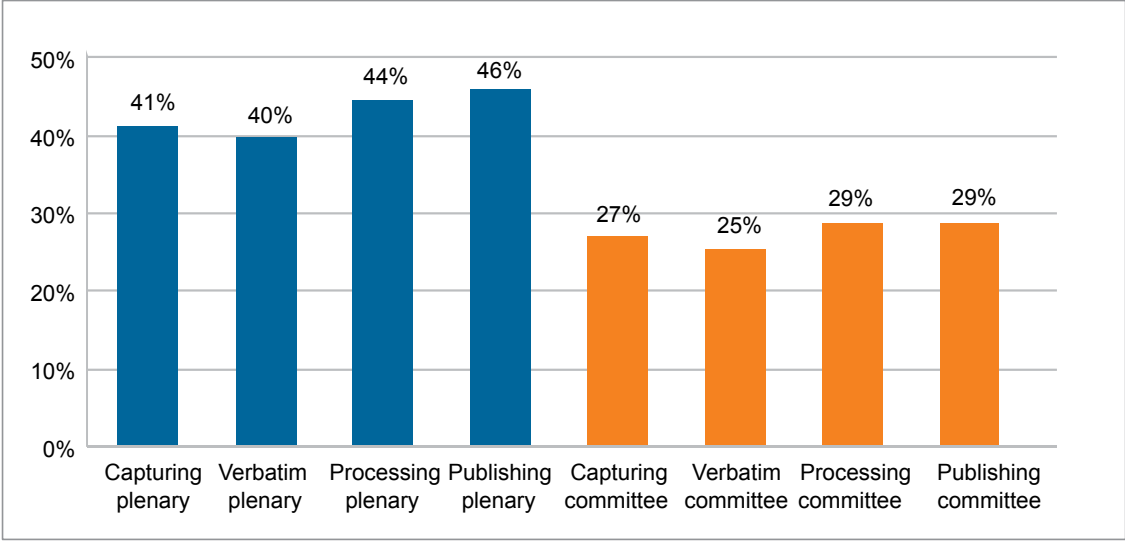
The number of respondents to this question was so small that all respondents (N=63) was used as the denominator.

## 5. General

### Question 5.1

**Is the technology for capturing, preparing, managing or publishing of plenary and committee proceedings supported by a database management system (DBMS)?**

Figure 34: Availability of a database management system (DBMS) to support processes



Source: Survey CRPCSP, Questions 5.1.

Percentages based on number of respondents to each option.

Plenary: Capturing N=63 (100%), Verbatim N=63 (100%), Processing N=63 (100%), Publishing N=57 (90%).

Committees: Capturing N=60 (95%), Verbatim N=54 (86%), Processing N=54 (86%), Publishing N=39 (62%).

### Question 5.2

**Does the parliament prepare other documents regarding plenary and committee sessions?**

Figure 35: Other documents prepared

	Summaries	Minutes	Reports	Other	None
Plenary	52%	67%	59%	16%	5%
Committees	44%	63%	56%	13%	10%

Source: Survey CRPCSP, Question 5.2.

Percentages based on total number of respondents to survey (N=63)



