



Chamber of Deputies
Brazil

Virtual Plenary

Strategy and Architecture

April, 2020

1. INTRODUCTION

On March 17th, the Chamber of Deputies of Brazil, approved a law (Resolucao 14/2020) which establishes a digital solution to provide **Virtual Plenary** as an urgent action to make the legislative process work in this Covid-19 scenario. Here you can find an English version of it (Annexe 1 - EN version). An internal normative was also necessary to assure compliance to the law. A week later, on March 25th, there was the first Virtual Plenary Session on the Brazilian Chamber of Deputies with the participation of more than 500 MPs.

Currently, virtual plenary sessions are part of the routine of that Legislative House as a successful experience.

The main challenge was to design a solution that could accommodate the 513 MPs in a remote Plenary session. It is more than a simple videoconference. It requires an integration between a broadcasting service with the systems related to the legislative process. Two critical functionalities should also be considered: the voting and the presence registration.

2. COMPLIANCE

According to the Resolution (Resolução) 14/2020 and the internal normative:

- the voting process, totaling votes, and recording of proclaimed voting results will occur entirely in institutional systems of the Chamber of Deputies, subject to the applicable security protocols.
- the solutions to manage the audio and video of the sessions can be based on commercial platforms, provided that these platforms meet the requirements established in this resolution or in their use.
- participation by audio and video in the sessions will be possible through a platform approved by the Chamber of Deputies, properly connected to the Internet and the participation in the voting process will require an enabled smartphone.
- the Virtual Plenary shall require two-step verification for the first authentication of the device that will be used by parliamentarians to participate in the votes.
- the Virtual Plenary will allow simultaneous access by all MPs and the General Secretariat, which will mediate the session under the direct command of the President of the Chamber of Deputies.

3. ARCHITECTURE

Considering those requirements, the Virtual Plenary architecture was designed as a digital solution composed by two blocks of technology (fig 1): the videoconference service and the internal systems.

The videoconference service is used only to transfer images and sound of the Plenary Sessions which are public. Its user accounts are external to the Chamber of Deputies authentication. Accounts login connected to social media are not accepted.

The internal systems are composed by an App and a Management system that interact with the legislative systems (fig. 1). These two blocks are independent to each other.

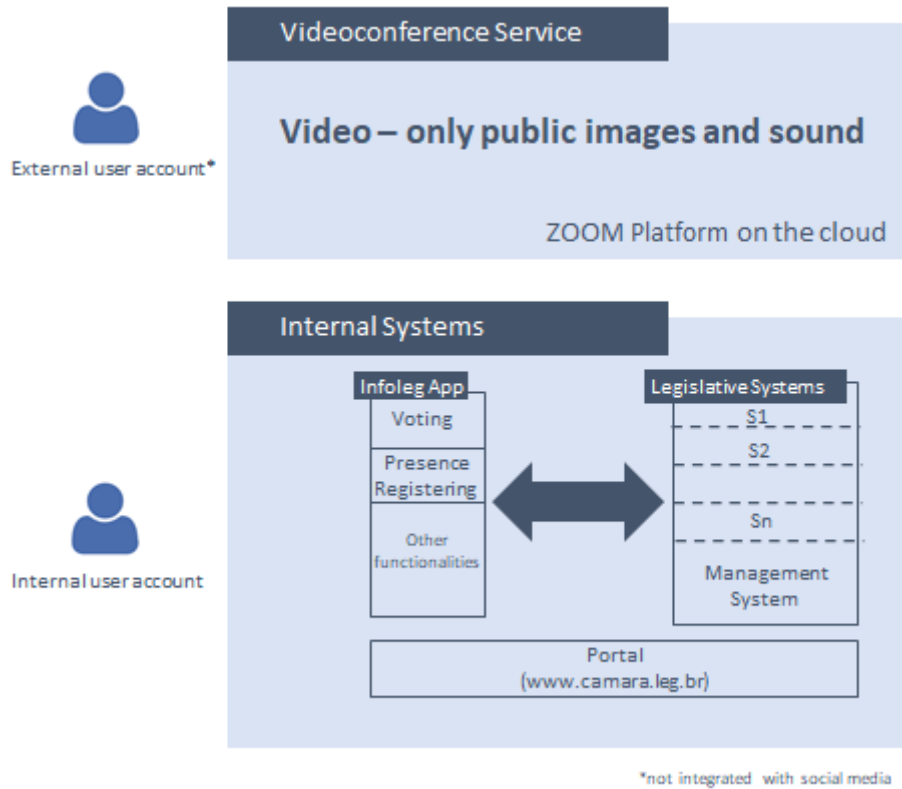


Fig 1 - Virtual Plenary Architecture

3.1 Infoleg App

The Chamber of Deputies of Brazil’s Infoleg App was updated to offer two new functionalities:

- a. The registration of the MPs presence
- b. The MPs voting

In order to have access to these functionalities, each MP has to register his/her mobile device on the intranet network in advance, similar to what banks do with their customers before they are allowed to transfer money, for instance. This enhances the security for the whole remote process.

Registering and voting data are collected by the Infoleg App and sent through the Internet directly to the Chamber of Deputies’ databases. Data are encrypted for security reasons and no cloud service is used to handle the data.

Infoleg also shows all phases of the legislative process, all versions of the bills, all amendments, the results of each voting, all speeches, the schedule and agenda of the committees' meetings, and many other information about what is going on in the legislative process and about the deputies.

In order to use the Infoleg App, the MP has to install it first, heading to Google App Play Store, for devices running Android, or Apple iTunes Store, for devices running IOS (Fig 2.).

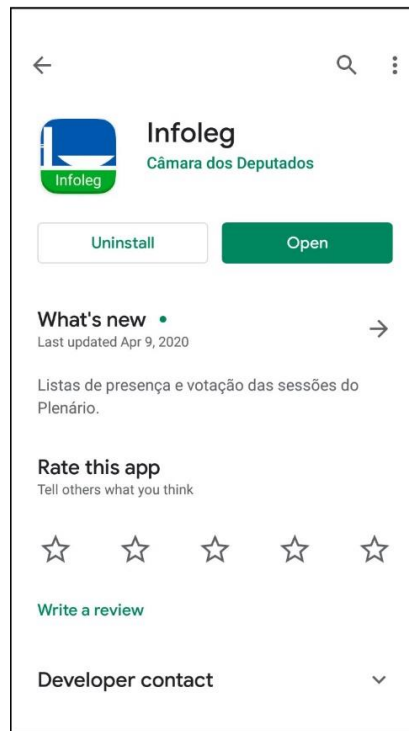


Fig 2 - Installing the Infoleg

The Infoleg App allows MPs to access different kinds of information, needed for their daily work. Besides, many pieces of information are also of public interest, so the whole society can download the App and access the data anywhere, anytime. Information regarding the agenda, MPs, sessions, the Plenary and many others are easily reachable, improving transparency (Fig 3).



Fig 3 - Infoleg Options

Among the information available since 2016 in the Infoleg App, one can find all the bills, including the full text of the bill, amendments and more (Fig 4).



Fig 4 - Querying bills

As the App runs on mobile devices and MPs carry their mobile with them almost all the time, the App also implements different notifications, as the attendance registration, start of the plenary session, voting and similar situations in committee meetings (Fig 5).



Fig 5 - Notifications

Once installed, the MP has to register the device on the Chamber of Deputies' internal network, otherwise the new functionalities won't be available. The registration process is done via a unique identification that is generated after each new App installation. Further updates won't change this unique identification. But, if the App is uninstalled and then reinstalled again, a new unique ID will be generated and the MP will have to register the device once again (Fig 6).

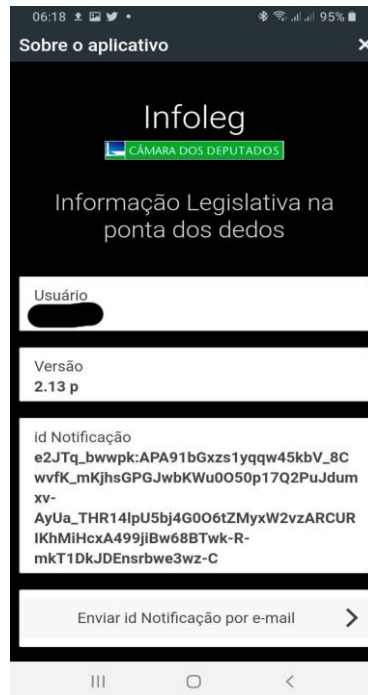


Fig 6 - Registering the device

After registering the device, the MP will be able to see the following options during a virtual Plenary Session:

1. Zoom link;
2. Registering (Registrar Presença) button;
3. Voting (Votação) button.



Fig 4 - Registering Presence

The Zoom link leads the MP to the Zoom app, if it is already installed on the device, or to the Zoom website, which will lead her/him to the Zoom App installation page.

Registering (Registrar Presença) button, which allows the MP to indicate her/his presence in the virtual Plenary Session. The MP will have to type in his password to confirm registration (Fig 8).

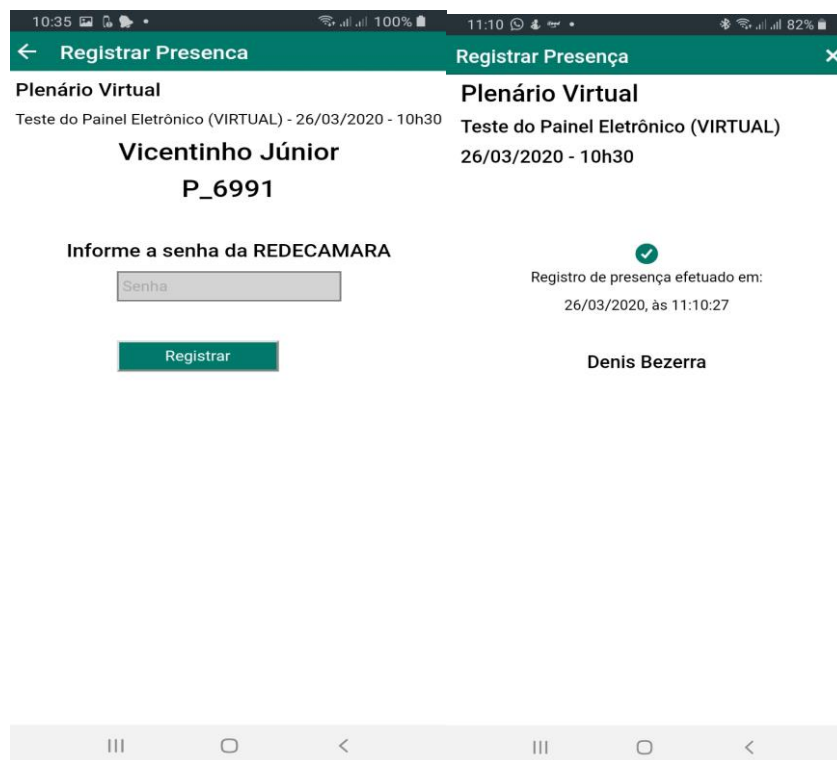


Fig 8 - Presence registration

Voting (Votação) button, which allows the MP to cast her/his vote in the matter being discussed. There is a timeframe in which the MPs are allowed to vote. the MP will have to type in his password to confirm her/his vote (Fig 9).

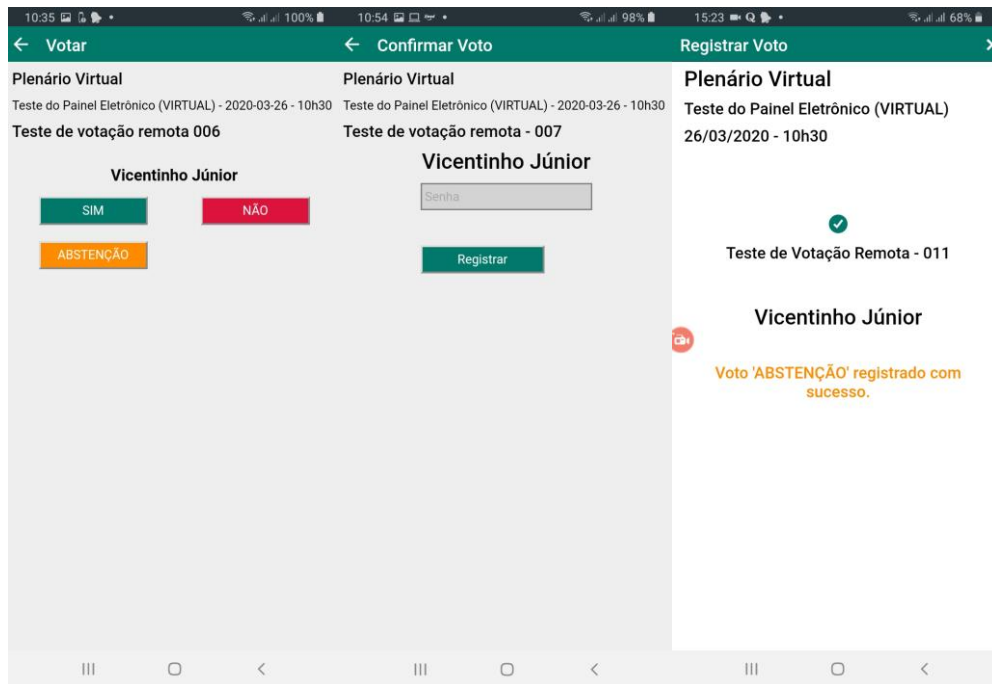


Fig 9 - Voting

Before voting, each MP has access to the Leaders of Political Party’s voting orientation (Fig 10).

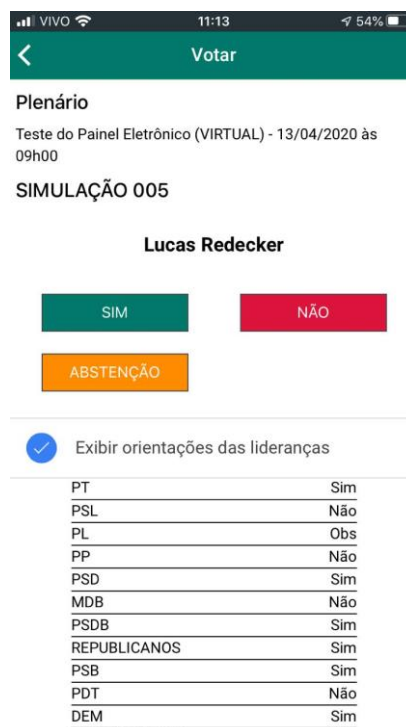


Fig 10 – Leaders’ voting orientation

MPs can also better follow the session via attendance and voting information available in the App (Fig 11):

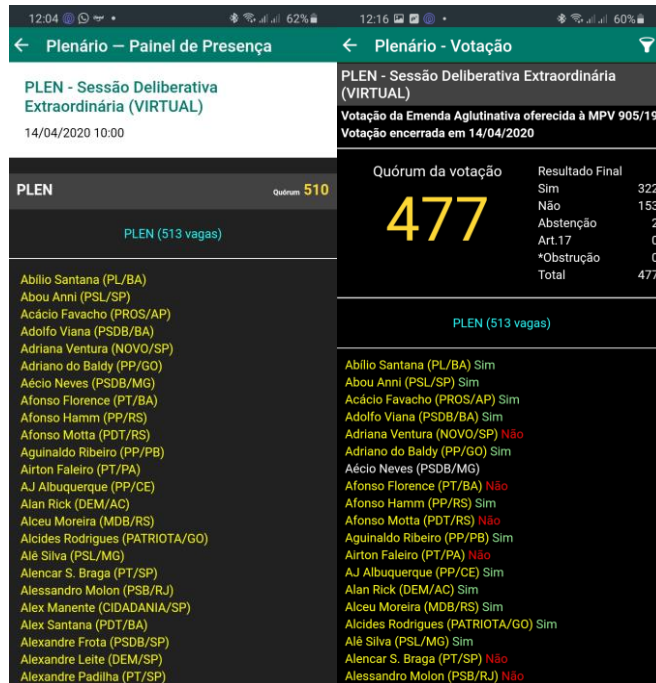


Fig 11 – Attendance and Voting information

And last, but not least, MPs also have access to information about past sessions, including the session recorded video (Fig 12).

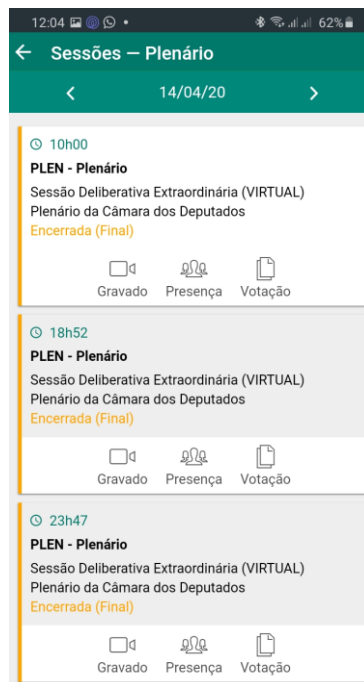


Fig 12 – Information on past sessions

Although the App already implements Two-Factor Authentication (2FA) including, Public and Private Keys Cryptography implementation, which leads it to highly secure, with almost no possible way of breaching the content that is sent between each MP and the Chamber of Deputies IT infrastructure

3.2 Internal Legislative Systems

The legislative systems permit that the MP, on a remote mode, submit a new bill or an amendment of a bill which receives a digital authentication and follows the whole legislative process on a digital format. It allows that MP can sign an electronic version of a bill, before submit and collect signatures of others MPs in case of bills that demands a collective authorship. It includes all the revisions on the committees until the final version voted.

The App integrates the votes and the MPs presence with the Legislative System. It also has a monitoring functionality (a monitoring panel) to be used by the General-Secretary and the President of the Chamber of Deputies. So, everything that happens in the “remote plenary” is registered and supported by the systems, which are updated on the fly:

- a. the tracking of the legislative process preserved,
- b. the data following the same flows and all open data (related to the legislative process) continue to be published to the society,
- c. the portal ([\[https://www.camara.leg.br\]](https://www.camara.leg.br)) continues to be updated as usual.

Thus, once the data is registered within the legislative system, it is handled as a regular Plenary session, without the need of any further special process.

3.3 Videoconference Service

The ZOOM Service was chosen as the conference tool because there were two requirements that only this product offered at this moment in Brazil: it had the capacity to more than 500 participants and it could be acquired and implemented in a week (if as a cloud service).

The place where the president would be hosting the session was defined as the Plenary. A few reasons supported this decision: this is a large place where people that were advising the President could be at a safe distance, it is a room well equipped with high quality of cameras and microphones, and it permits that a small number of MPs participates of the session, if necessary.

The ZOOM service was bought as a room for up 1000 participants. Its configuration considered the actors as the following roles (fig 7):

- 512 MPs as remote participants.
- The president of Chamber of Deputies in the Plenary. On the context of ZOOM, he is a regular participant. His camera is a TV Camera, his

microphone is a professional one. Both are connected to a computer which is a ZOOM station.

- Civil servants operating the ZOOM conference (conference's host).
- The tribune. A place reserved to MPs who are present in the session when she/he speeches. It was planned to sessions that encompasses remote MPs and a few present MPs.

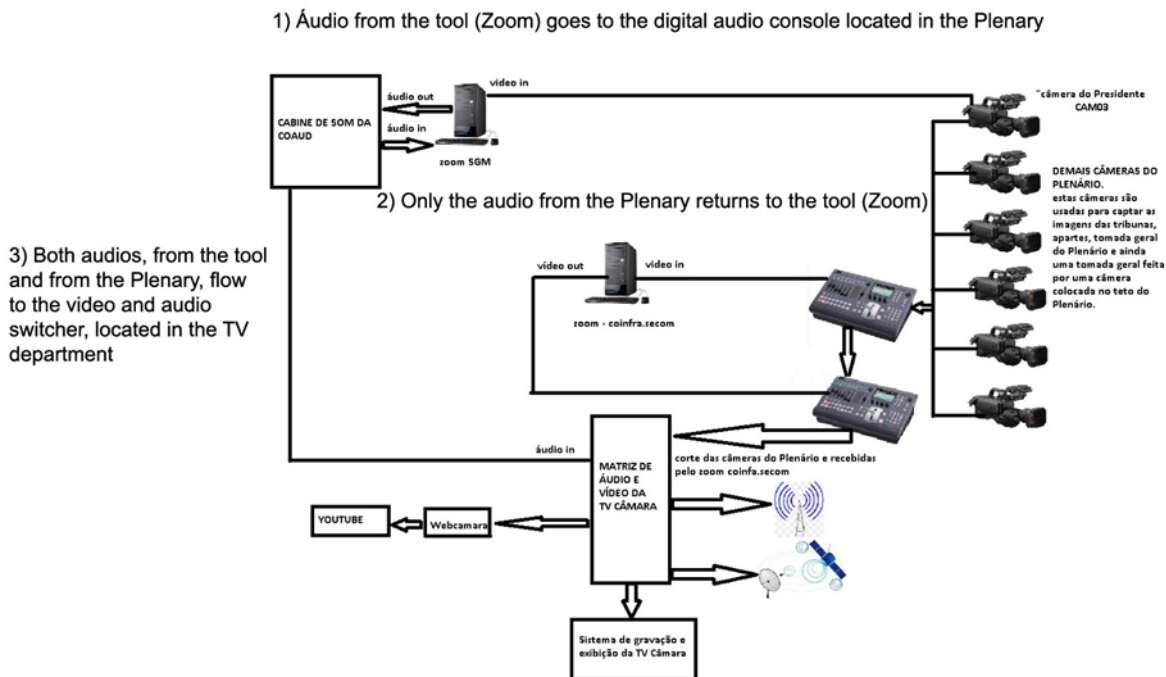


Fig 7 - ZOOM setup

On the ZOOM context, the microphones are controlled by the ZOOM host, who follows the President commands. All participants are in mute mode, except the President. The participants only have the microphone turned on when the President passes the floor. The MPs request the turn to speak by the system. When the MP begins to speak, ZOOM recognizes the fact and switches his/her video to a larger one, spotlighting it to everyone else.

The tests demonstrated the need of two people operating as a host at the same time. When the President gives the floor to a MP, the operator who starts the search operation for the MP's name, checks if he is in the Plenary or in the virtual meeting and releases his microphone. That same operator ends the process, muting his microphone and checking if the floor has returned to the President.

When the President gives the floor to the next speaker, the other operator performs the above operation. Between one speaker and another, the completion of the process was very critical. With two operators, while one is busy completing the first speaker process, the other operator will be starting the next speaker process.

A few ZOOM parameters deserve attention:

- File transfer was disabled - host cannot send or receive files. The use of ZOOM platform is exclusively for videoconferencing.
- Record the meeting: all meetings are recorded.
- Chat functionality was disabled. The tests demonstrated that there is always a risk of not intended actions using the chat disturb the sessions
- A subdomain created specially to participants authorized to the virtual sessions (MPs, the operators, SG staff)

The Video Operations Center (VOC) has one professional camera for the President, connected to the president's ZOOM account along with a professional microphone.

They also have one computer connected to ZOOM, which has 6 cameras, via a video switcher, connected to it. Thus, VOC can get 6 different images and select one of them to send to ZOOM, which means all the MPs connected to ZOOM will be able to see that selected image. For the MPs that are physically in the Plenary, there are two big screens which also show the same image to them.

Those 6 cameras are positioned in a way to show the results of each voting, the presence, the Plenary and the images selected by the ZOOM host in big screens in the Plenary. The images of the camera in the plenary and the ZOOM images are transmitted to the TV, the portal and the Chamber of Deputies' Youtube channel.

Microphonics, echo, or feedback is a possible issue during the meetings. The setup (fig 7) to avoid microphonics is as follows:

- The top left computer (ZOOM SGM) sends (1) the audio from the ZOOM to the audio equipment (digital audio console) located in the Plenary.
- The sound from the Plenary (2), and only the sound from the Plenary, returns to the computer and is sent to all participants that are located remotely.
- Both audios from the ZOOM and from the Plenary are sent to the TV video switcher
- From the switcher, the signal (video and audio) are broadcast to the TV, Youtube and so on.

Also, some recommendations are in place to further avoid microphonics:

- ZOOM should not be used inside the Plenary – those who are in the Plenary need to use the proper microphones that are available (the same ones that are available in a regular Plenary session)
- Those who are speaking remotely and are not using a headset are expected to turn their speakers off before unmuting their microphones
- The meeting operator keeps all microphones muted, except for the person who has the floor, whose microphone is unmuted by the operator

4. RECORDING OF THE SESSIONS

All speeches of the sessions continue to be recorded by distance (recording staff is working on home office mode). Along with the transcribed version, they are sent to the legislative system to follow the usual flow of information and to have the portal dated.

5. SUPPORT TO MPs

A new phone number was available exclusively for Virtual Plenary calls. Videos and tutorials were built to give information to MPs about the systems as well as tips for a virtual meeting.

For further information, contact:

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ANNEX 1

RESOLUTION OF THE BRAZILIAN CHAMBER OF DEPUTIES No. 14, 2020

This resolution establishes, within the scope of the Chamber of Deputies, the Remote Deliberation System, an exceptional measure aimed at making the Plenary viable or functional during a public health emergency of international importance regarding coronavirus (Covid-19).

The CHAMBER OF DEPUTIES approves and promotes the following Resolution:

Art. 1 This Resolution institutes, within the scope of the Chamber of Deputies, the Remote Deliberation System (SDR), as a way of discussing and voting on remittances of matters subject to the Plenary.

Single paragraph. Remote voting and discussion as defined in this Resolution is the appreciation of matters through the technological solution that dispenses with the physical presence of parliamentarians in the Plenary.

Art. 2nd This Resolution institutes the Remote Deliberation System (SDR), whose use is exceptionally measured by the President of the Chamber of Deputies to enable the plenary to work during a public health emergency of major international public importance for coronavirus (Covid-19).

§ 1 If the SDR is actuated by the President of the Chamber of Deputies, the plenary deliberations will be carried out through virtual sessions and as meetings of commissions of the Chamber of Deputies that are suspended.

§ 2 The President of the Chamber of Deputies determines that the face-to-face deliberations must be resumed as soon as the displacement of parliaments between Brasília and their States and the sessions and meetings of the **organization units** of the House are compatible with the recommendations of the Ministry of Health.

Art. 3rd The SDR will be based on one or more platforms that will allow the debate with audio and video among parliamentarians, observed as follows:

I – the sessions held through the SDR will be public, with exception defined in items I, II and III of the sole paragraph of art. 92 of the Internal Regulations of the Chamber of Deputies, approved by Resolution No. 17, of September 21, 1989, but ensuring a simultaneous transmission through institutional media channels and the subsequent availability of audio and video sessions;

II - the voting system must preserve the confidentiality of the quality of the parliamentary vote until the moment when the vote is totaled and its result is proclaimed;

III - after the voting is finished, the vote cast through the SDR is irreversible;

IV - no technological solution used by the SDR will involve the transfer of biometric data from parliamentarians over the Internet;

V – the voting process, totaling votes and recording of proclaimed voting results, will occur entirely in institutional systems of the Chamber of Deputies, subject to the applicable security protocols;

VI – the solutions to manage the audio and video of the sessions can be based on commercial platforms, provided that these platforms meet the requirements established in this resolution or in their use;

VII - the SDR may operate on smartphones that use IOS or Android operating systems for voting and participation of audio and video in the sessions;

VIII - participation by audio and video in the sessions will be possible through a platform approved by the Chamber of Deputies, properly connected to the Internet and the participation in the voting process will require an enabled smartphone;

IX - the SDR shall require two-step verification for the first authentication of the device that will be used by parliamentarians to participate in the votes;

X - the SDR will allow simultaneous access by all MPs and the General Secretariat, which will mediate the session under the direct command of the President of the Chamber of Deputies;

XI - during the session in which the SDR is being used, it will be available uninterruptedly, under the responsibility of the Directorate of Innovation and Information Technology; call center for parliamentarians and the leaders will be available for problems related to the operation of the platforms that make deliberation feasible.

Art. 4 The sessions held through the SDR will be considered extraordinary deliberative sessions of the Chamber of Deputies, in whose minutes the information that the deliberations were taken in a virtual environment will be expressly recorded.

§ 1 The sessions held through the SDR must be called at least 24 (twenty four) hours in advance, unless they are held in sequence.

§ 2° In the sessions convened through the SDR, matters related to the international public health emergency related to the coronavirus (Covid-19) should preferably be considered.

§ 3° Subjects that have the favorable opinion of Leaders representing 2/3 (two thirds) of the members of the House and of the Leaders of the Government, the Majority, the Minority and the Opposition may, upon request, be included in the agenda already in the regime of urgency referred to in art. 155 of the Internal Regulations of the Chamber of Deputies, if they are not yet processed in this regime, and, in relation to them, there will be no requirements for removal of the agenda, postponement of the discussion or vote, of discussion or voting in installments or by a determined process, nor requirements of simple detachment or breach of interstice for request for verification of symbolic voting, being ensured the right to submit outstanding requests for bench and Plenary amendments, subject to the provisions of § 4 of art. 120 of the Internal Regulations of the Chamber of Deputies, approved by Resolution No. 17, of September 21, 1989.

§ 4 If the agenda for the session called to be held through the SDR contains only items that comply with the provisions of § 3 of this article, the term of the session may be extended by the President of the Chamber of Deputies for the time necessary for the conclusion appreciation of the items on the agenda.

Paragraph 5 In the event of inclusion of matters that do not meet the requirements set forth in Paragraph 3 of this article, all procedural requirements provided for in the regulations will be admitted and the limitation of the duration of the session to the term provided for in the caput of art. 67, provided the extension for 1 (one) hour, provided for in the caput of art. 72, both of the Internal Regulations of the Chamber of Deputies, approved by Resolution No. 17, of September 21, 1989.

Art. 5 The availability by the **member of parliament or deputy** to a third party of his personal password or the registered device to register his vote will imply in a procedure incompatible with parliamentary decorum, under the terms of item II of the caput of art. 55 of the Federal Constitution, except in the cases in which this procedure is indispensable for parliamentarians with disabilities to make appropriate use of the system.

Art. 6 Prior to its entry into operation, the SDR must be approved by the General Secretariat of the Bureau.

Art. 7 Act of the Chamber of Deputies' Board will regulate this Resolution within 72 (seventy-two) hours.

Art. 8 This Resolution enters into force on the date of its publication.

CHAMBER OF DEPUTIES, March 17, 2020.

RODRIGO MAIA

President of the Chamber of Deputies of Brazil