Usability Guide

Market Module

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Glossary

API	*Application Programming Interface*
DRM	*Digital Rights Management*
ECG	*Electronic Content Guide*
EPG	*Electronic Programming Guide*
MIMO	*Multiple Input - Multiple Output*
OTA	*Over-The-Air*
OTT	*Over-The-Top*
Thumbnail	*Reduced-size version of an image or video*
URL	*Uniform Resource Locator*
VOD	*Video On Demand*

1. TV 3.0 ecosystem

Terrestrial free-to-air television has, throughout its evolution, continuously enhanced the integrated consumption experience, with greater personalization and interactivity. TV 3.0 aims to combine the qualities of traditional terrestrial broadcasting with the possibilities offered by the internet, leveraging the most advanced technologies.

In this context, tests were carried out under the supervision and technical support of the SBTVD Forum, to develop a system that enables integrated consumption via air and broadband, ensuring easy access and adequate usability. The unification of this media consumption experience across different platforms requires the establishment of standards and protocols that guarantee interoperability among devices and services. The adoption of standardized formats for transmission, compression, transport protocols, metadata, and signaling is essential for broadcasters to distribute their content consistently, and for manufacturers to develop TV receivers that are compatible and adequate with the various transmission sources. This alignment between broadcasters, transmission sectors, software developers, academia, and the consumer electronics industry is necessary to deliver the most efficient, effective, and innovative technical solution for the television experience.

The interaction and user interface of TV 3.0 receivers must adhere to this new reality, making interaction truly seamless, in which the underlying technology becomes transparent, and the consumption experience is characterized by usability, simplicity, and accessibility.

This guide is intended to describe the viewer's experience within the TV 3.0 application catalog.

2. Introduction

2.1. Paradigm of app-based television

In the context of TV 3.0, applications cease to be an addition to a TV channel and become the focal point of all control and consumption of television content. This shift to an "**application-oriented television" paradigm is crucial** to enable proactive management of viewer actions throughout their entire content consumption journey, shaping it into a personalized, immersive, engaging, intuitive experience with minimal friction.

However, this paradigm shift requires an evolution of TV sets compared to current ones. Several changes apply, given that the entry point for TV receiver 3.0 is no longer the channel but the initial application, represented by the broadcaster's icon.

A TV 3.0 receiver must be easily recognized by the end viewer through the standardized TV 3.0 icon and app-based navigation.

Nevertheless, since television is **a medium for everyone, usability becomes a key issue** in this shift of navigation paradigm and access to broadcast TV content on the receiver. Despite recent sophistication, **simplicity in accessing broadcast content remains a basic premise**. Thus, this new paradigm requires the receiver to adapt to the spectrum scanning process, the instantiation of broadcasters' initial applications (Bootstrap Applications), and support for metadata, in the user interface, in the ability to handle both OTA (Over-The-Air – content transmitted via broadcast) and OTT (Over-The-Top – content transmitted over the internet), as

well as functionalities such as the Electronic Programming Guide (EPG) and the Electronic Content Guide (ECG).

2.2. Application and dependencies

This document establishes the market guidelines for the TV 3.0 ecosystem, defining the requirements and mandatory data to be transmitted, as well as the usability and accessibility characteristics of receivers, in line with the objectives of personalization and seamless interaction that characterize the new standard.

The guidelines and rules in this document **apply to all TV 3.0 receivers**. Exceptions for specific receiver profiles are explicitly indicated in the text.

This document must be considered together with Decree nº. 12.595, of August 27, 2025, and the following TV 3.0 Technical Standards:

- ABNT TV 3.0 Standards
- SBTVD Forum TV 3.0 Operational Guidelines
- SBTVD Forum TV 3.0 Conformance Tests
- SBTVD Forum TV 3.0 Data Access and Privacy Guide

2.3 Definitions

Grouping of initial applications: A set of initial applications accessible through a single icon in the application catalog.

Initial application (*Bootstrap Application*): An optimized application for agile loading, corresponding to each digital terrestrial television programming, loaded and configured exclusively by digital terrestrial television signals.

Secondary application (*Broadcaster Application*): An additional application associated with an initial application, provided via broadcast or the internet to deliver enhanced experiences.

Application catalog: The main interface for viewers to browse and access initial applications.

Icon: A graphic representation with standardized size and resolution, which allows the viewer to access the application catalog, an initial application, or a grouping of initial applications.

TV 2.X: Terrestrial Digital Television system defined by the set of ABNT NBR 15601 to ABNT NBR 15610 standards (all parts), also known as SBTVD (Brazilian Digital Television System), ISDB-Tb (Integrated Services Digital Broadcasting - Terrestrial - Brazilian version), and International ISDB-T.

TV 3.0: Terrestrial Digital Television system defined by the set of ABNT NBR 25601 to ABNT NBR 25609 standards (including this document), also known as DTV+.

3. Tuning and antenna for signal reception

Tuning in free-to-air television signal is a mandatory step in the TV set initialization process.

TV 3.0 receivers must include, as an integral part of the product, an internal antenna (either built-in or attachable) to ensure reception of digital terrestrial television signals, guaranteeing full functionality of the equipment at the time of purchase.

The internal MIMO (Multiple Input – Multiple Output) antenna system must enable reception across the entire TV 3.0 frequency range.

In the case of the receiver being a TV set, the antenna system should preferably be embedded within the chassis of the television, or, alternatively provided as an accessory to be connected to the TV. In the case of dongles and set-top boxes, the antenna system must also be included. That is, the package containing the device must also include the antenna system, as well as the remote control.

Even if the internal antenna system is embedded within the receiver, the device must also incorporate appropriate connectors for an external antenna system.

4. Initial application discovery

4.1. Initialization

After the first initialization of the television — once it is connected to power in the viewer's home for the first time ("*out-of-the-box experience*") — the spectrum scanning process must begin, through its internal or external antenna, ensuring free access to the content of broadcasters that use the spectrum in the location where the receiver is installed. This step is mandatory, running in the background without interference or blocking from the viewer, and it must not disrupt or interrupt the sequence of first-use setup of the receiver.

The spectrum scan, as well as subsequent automatic or manual updates, must incorporate all detected signals into the application catalog, including transmissions in both TV 3.0 and TV 2.X formats.

Only free-to-air **initial applications discovered through spectrum scanning** may be included in the application catalog. Possible exceptions to this rule in each country are described in the annexes of this Guide. Annex A describes an exception applicable to Brazil.

If no free-to-air TV signal is found during the discovery process of initial applications, the receiver must display an error message indicating the need to connect an external antenna and provide illustrated instructions on how to make this connection.

4.2. Access to initial applications when the receiver is not connected to the internet

The discovery process of TV 3.0 initial applications **is tied to the existence of the corresponding signaling transmitted over-the-air**. The signaling of each initial application includes a list of addresses referring to the broadcaster's standard linear programming. These addresses may correspond to over-the-air (OTA) transmission or internet (OTT) delivery.

It is possible to flag programming available only over-the-air, only via the internet, or both, allowing the receiver to access programming via the internet in case of OTA reception failure.

From the moment the viewer accesses the initial application, the receiver may retrieve, along with the broadcaster's linear programming, secondary applications (Broadcaster Applications) transmitted by the broadcaster. These may provide alternative or complementary content, either linear or non-linear, transmitted over-the-air or via the internet. The access to standard linear programming transmitted over-the-air must remain available to the viewer, even if the receiver is not connected to the internet.

The access to initial applications whose standard linear programming is available over-the-air cannot be blocked or impaired if the internet connection is unavailable. In the application catalog, any messages regarding lack of internet connection must not interrupt or hinder video consumption via OTA.

5. Application Catalog

5.1 Initial Order of Icons

The initial order of TV 3.0 and TV 2.X icons must follow the order of the signaled virtual channels. Figure 1 below illustrates the the layout of the icons.
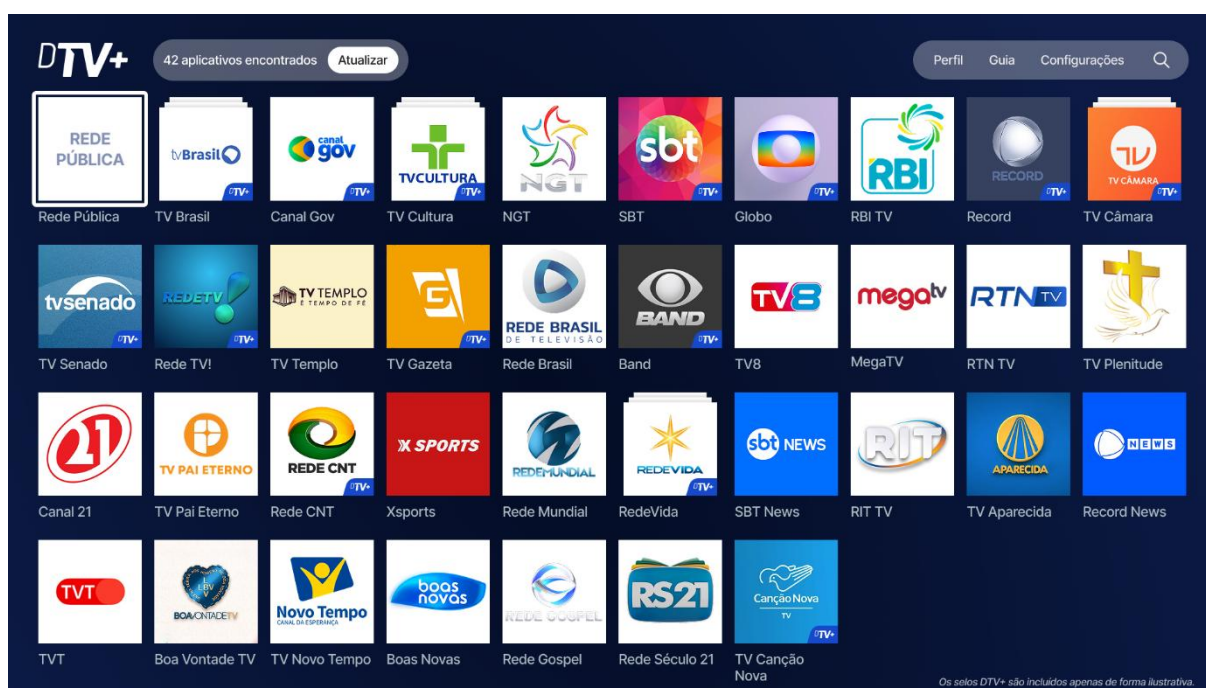

Figure 1: Example of the layout of TV 3.0 and TV 2.X icons sorted according to the numbering of virtual channels in the location where it is installed.

In addition to initial, ungrouped applications, two types of initial application groupings can be flagged in the transmission:

- **Mandatory groupings**: groupings in which the corresponding initial applications must always be accessed through a single icon in the application catalog, regardless of their occupation. The position of this icon should consider the smallest virtual channel flagged among the grouped initial applications.

- **Optional groupings**: groupings in which the corresponding initial applications may be accessed through a single icon in the application catalog, or their icons may be displayed separately in the catalog depending on the total number of icons.

The icons of initial applications in an optional grouping must be displayed separately in the application catalog, ordered according to their virtual channels but positioned after all others, only if this is possible without exceeding 40 icons in the catalog. Otherwise, only the grouping icon must be displayed, positioned according to its lowest virtual channel. It should be noted that if there is more than one optional grouping, it is not permitted to display some of them grouped together and others separately. Separate display can only be applied if all optional groupings can be displayed in separate icons for each initial application without exceeding 40 icons in the application catalog.

Note: The receiver should automatically update the display of optional groupings (whether displayed grouped or separately) with each update of the application catalog.

Figure 1 illustrates the case in which the initial applications that are part of an optional grouping are displayed in grouped form. Figure 2 illustrates the case in which the initial applications that are part of an optional grouping are displayed directly on the TV 3.0 application catalog page.
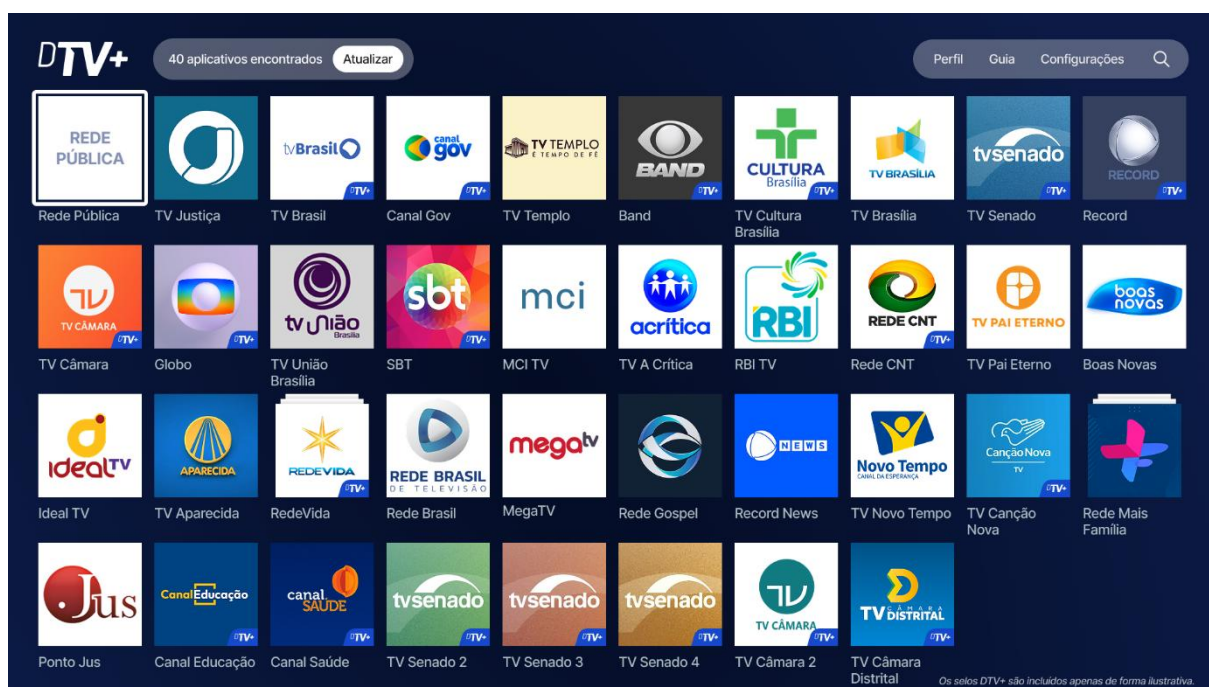

Figure 2: *Example of the arrangement of icons ordered according to the numbering of the virtual channels in the locality, where optional grouping icons are displayed at the end of the application catalog.*

5.2. Handling of initial application groupings

If grouped initial applications are signaled in the transmission, selecting the grouping icon must open a window displaying all corresponding initial applications (see Figures 3 and 4).
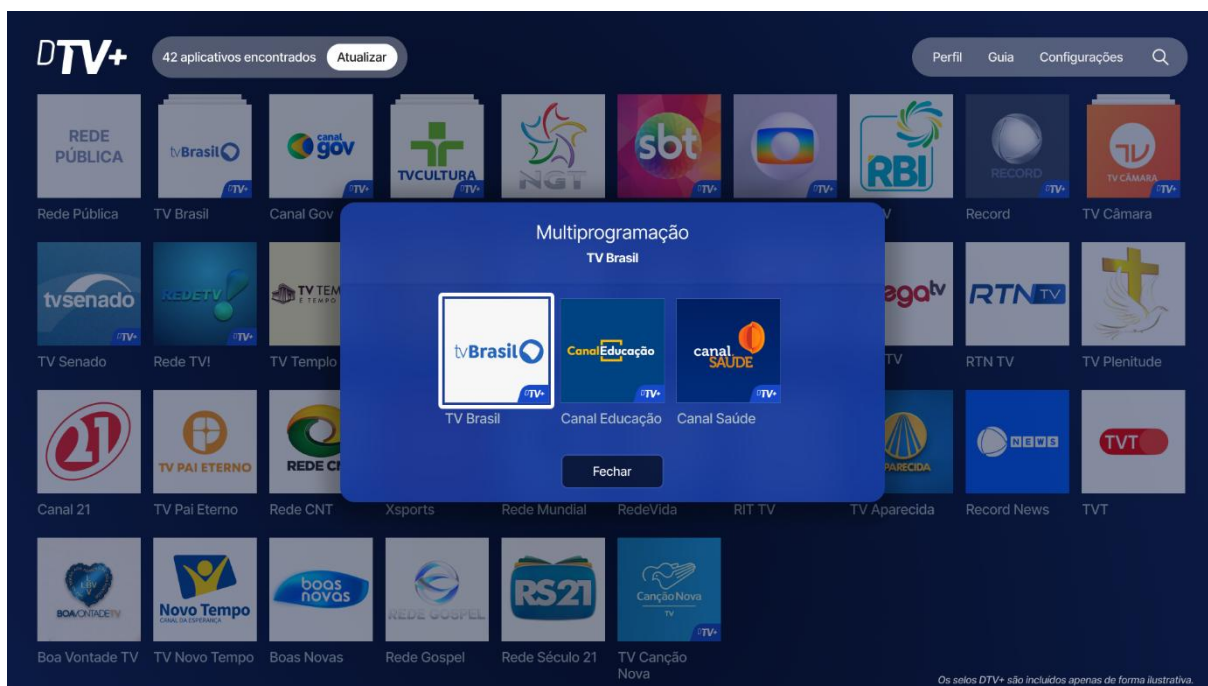
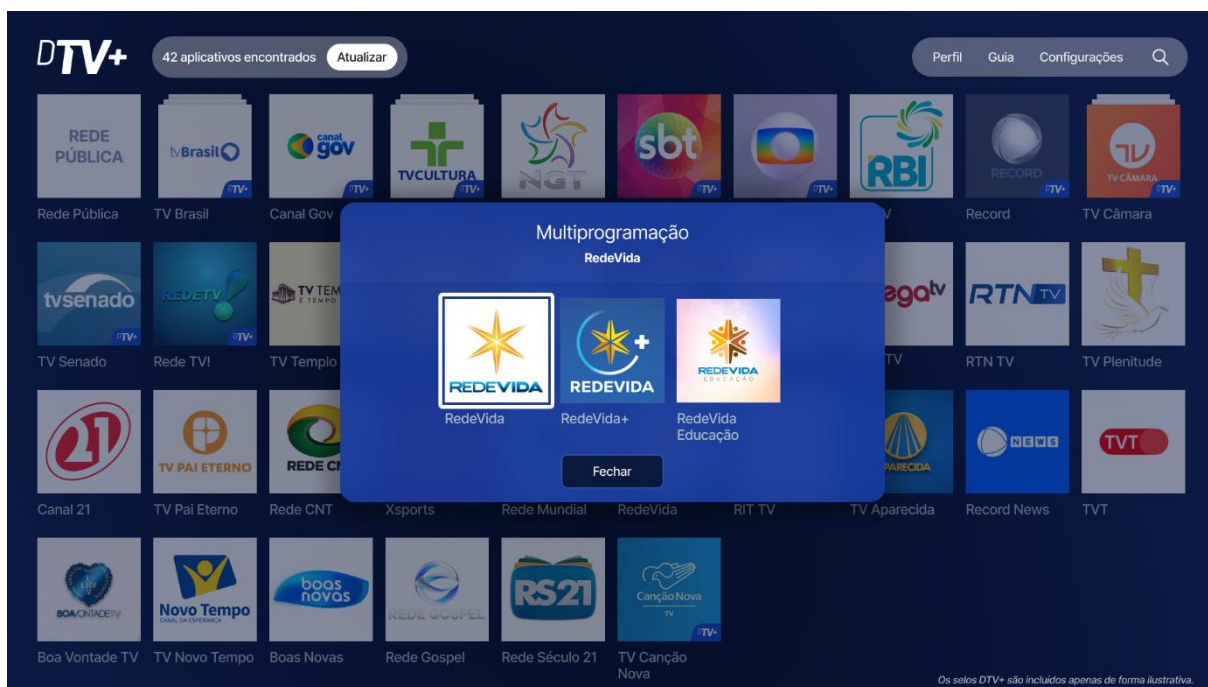*Figure 3: Floating window displaying an optional grouping of initial applications.*

Figure 4: Floating window displaying a mandatory grouping of initial applications.

The use of groupings optimizes the occupation of the application catalog while still allowing access to all initial applications.

A detailed description of the rules for handling grouped applications in Brazi is presented in Annex A.

5.3. Manual ordering of initial applications in the application aatalog

The order of the icons in the application catalog may be changed exclusively by the viewer, manually, individually by icon, according to their personal preferences. The deletion and hiding of icons are prohibited, as well as automatic reordering, or reordering based on criteria such as recurrence or usage time, even if temporary. The viewer may, at any time, configure the order of the icons in the application catalog and this will be reflected in their profile. For this purpose, the viewer must have the option to select and to favorite certain initial application icons or groupings of initial applications in the application catalog, thus creating a personalized and fixed list of icons that precedes the other (non-favorited) icons, which remain organized among themselves according to the virtual channel signaling, without duplicating the favorite icons. Different customizations may be applied to the different viewer profiles registered in the application catalog.

5.4. Application catalog functionalities

Zapping should be included in the TV receiver based on the order associated with the viewer's profile, including the initial applications contained in the groupings.

Under no circumstances shall duplication of programs already loaded in a grouping, whether mandatory or optional, be allowed, since this would result in additional exposure when zapping through the channels, thus undermining the desired equality among TV broadcasters.

Navigation between TV 3.0 initial applications must be facilitated, reproducing the current zapping experience between TV 2.X channels.

The elements and information at the top of the page are direct accesses to functionalities provided in the application catalog. It is recommended that the application catalog contain a direct access to force a manual rediscovery of the available initial applications, as well as access to profile and environment settings (see Figure 1).

5.5. Manual and automatic rediscovery of initial applications

It must be possible for the viewer to manually perform the discovery of TV 3.0 initial applications at any time.

Additionally, considering that not all TV 3.0 channels will begin their transmissions at the same time, it is mandatory that the process of discovering initial applications be executed automatically and periodically by the receiver.

Automatic discovery of initial applications must be carried out once per day and immediately after the receiver enters standby mode. The receiver must scan the entire radio spectrum to identify the existence of new signals in TV 3.0 format or TV 2.X signals. This periodic rediscovery of initial applications does not require the viewer's intervention and must comply with the energy efficiency standards applicable in each country.

Whenever a new initial application is discovered after the automatic retuning process, the next time the viewer accesses the application catalog they must receive a pop-up notification informing them of the existence of a new initial application.

5.6. Inclusion and exclusion of initial applications

The **deletion** of TV 3.0 initial applications during the tuning or retuning process is **prohibited**. Even if a previously registered channel is not found during the new initial application discovery process, it should remain in the list of initial applications.

The process of discovering initial applications only includes new initial applications, without deleting those previously loaded. Any scheduled or unscheduled interruptions of the signal cannot negatively impact the viewer's experience.

In the case of a broadcaster that has already had its initial application identified and is momentarily off the air, the initial application must indicate the unavailability of the signal captured over the air. The viewer must have access to an option to restart the channel list, if desired, within the area designated for broadcast TV on the receiver.

5.7. Organization of icons in application catalog

As the number of initial applications may vary depending on the locality, it is recommended that the size of each broadcaster's logo may vary in order to better occupy the screen.

Each icon may contain up to twenty (20) characters in two lines for the presentation of the name of the broadcaster/programming or grouping, and one image in vector format (SVG) for the presentation of the logo of the broadcaster/programming or grouping, organized in horizontal rows, with a maximum of ten (10) icons per row.

With the objective of allowing the visualization of the maximum possible number of icons without compromising the usability of the system, the application catalog must display at most forty (40) entirely visible icons in its initial interface. Therefore, the interface of the application catalog must allow the full display of four (4) rows of icons.

When the maximum number of entirely visible icons is exceeded, the icons that are not entirely visible in the initial interface may be accessed by scrolling. If the number of icons exceeds the capacity of the entirely visible area of the screen, the icons of the next row are displayed partially, clearly indicating that there are more icons available below, facilitating the viewer's understanding and navigation, and indicating the need to scroll the screen to access other initial applications. Figures 5 and 6 present options for the implementation of this functionality, seeking the best usability experience for the viewer.
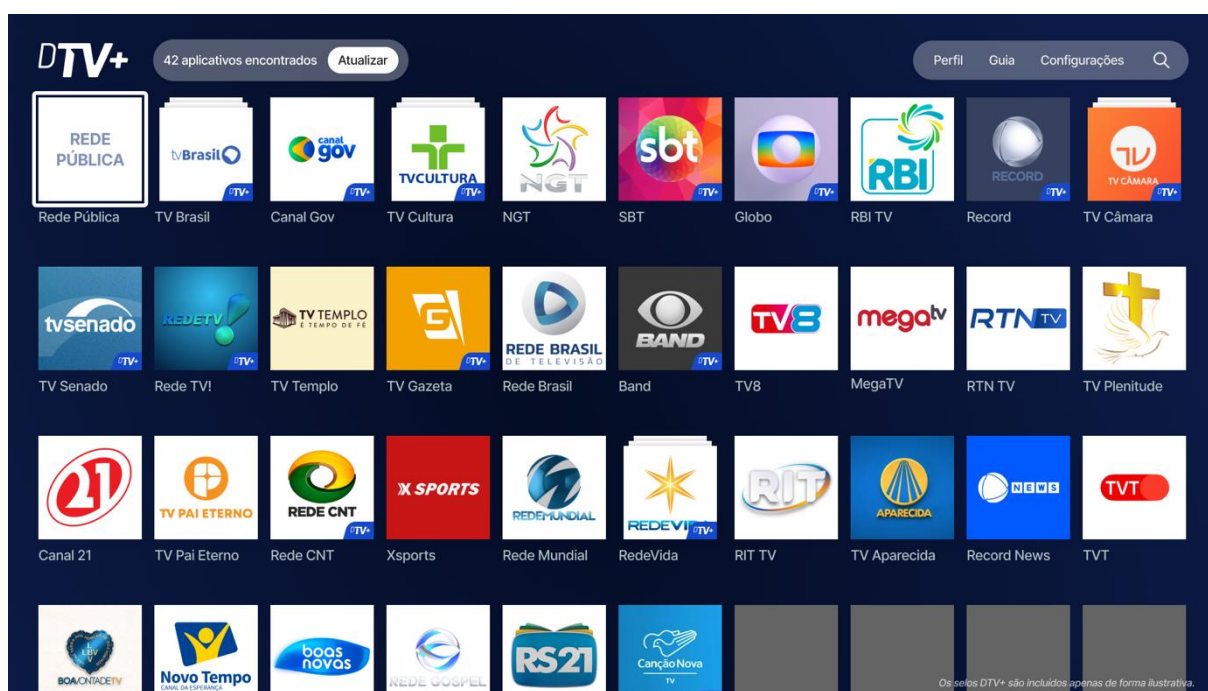

Figure 5: *Illustration of the application catalog when there are more than 40 initial applications – Option 1 (without the side scroll bar).*
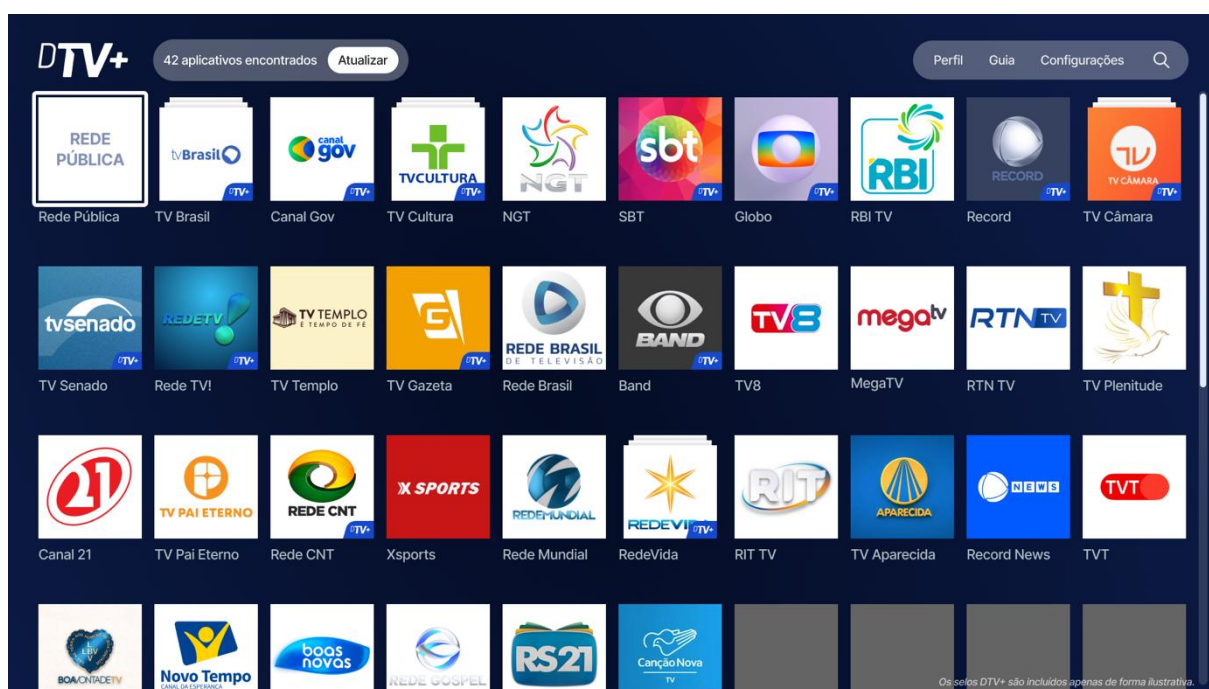
Figure 6: *Illustration of the application catalog when there are more than 40 initial applications – Option 2 (with the side scroll bar).*

As in several localities the number of initial applications in the interface is large, it is recommended that the receiver include voice guidance tools to improve the accessibility of the application catalog environment.

The receiver must allocate resources to handle up to sixty (60) initial applications within the application catalog environment. The interface must display the total number of initial applications on the device, accompanied by a button for retuning or updating the applications. This allows the viewer to take immediate action whenever necessary.

In the case that the same programming is simultaneously available in TV 2.X and TV 3.0, **only one initial application, corresponding to TV 3.0**, must be displayed. A TV 2.X program must be included in the application catalog as an initial application only when no corresponding programming is being received in TV 3.0. From each initial application, secondary applications may offer multiple programs, both linear and non-linear. That is, what is limited to sixty (60) is not the number of programs, but only the number of icons in the application catalog interface.

6. Access to the application catalog and initial applications

6.1. Icon for accessing the application catalog

The icon of the TV 3.0 brand, DTV+, for access to its exclusive environment must be presented in accordance with the brand application rules, in a fixed position on the home screen and in a size proportional to the other icons, and must be standardized across all receivers, regardless of manufacturer or model (see Figure 7).

Figure 7: *TV 3.0 brand icon.*

The icon for access to the application catalog must be permanently and prominently available, in the first position on the home screen of the TV 3.0 receiver, in dimensions and graphic treatment equivalent to its most prominent application (see Figure 8).
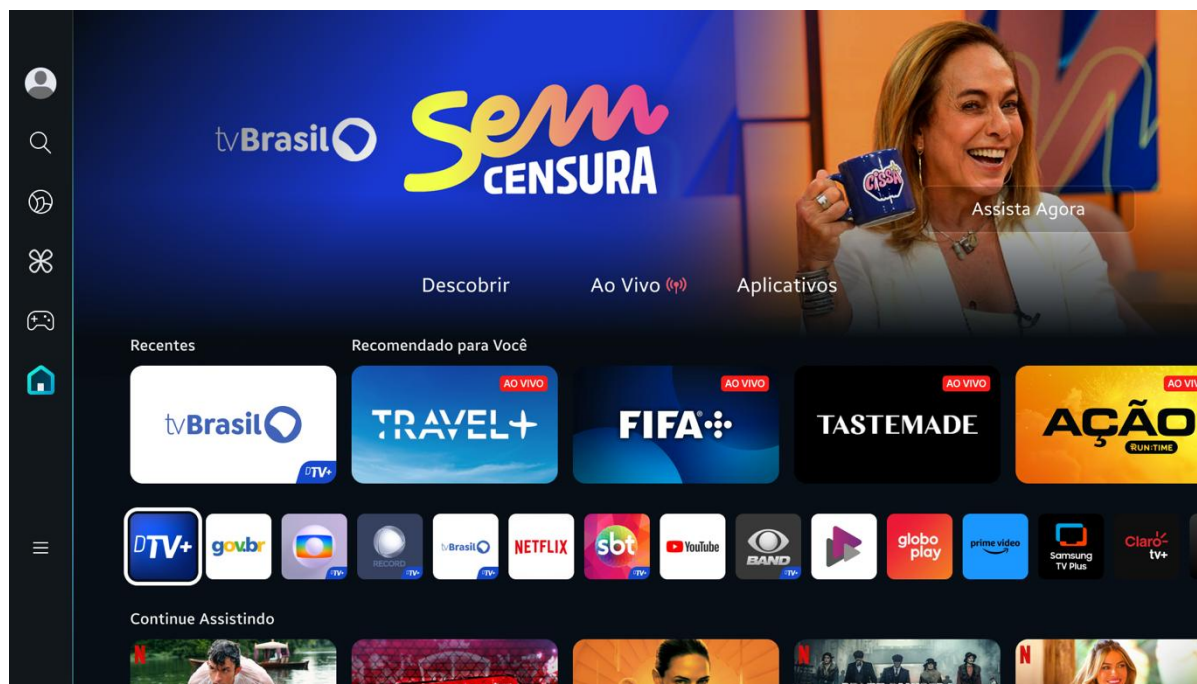
Figure 8: *Conceptual layout of the home screen of a TV 3.0 receiver with application of the DTV+ brand (highlighted through the white frame).*

The TV 3.0 icon must also be associated with the internal or external antenna input of the receiver and with the corresponding button on the remote control.

6.2. Viewer profile in the application catalog

All content consumption within the application catalog is associated with a viewer profile that is defined within the catalog.

Therefore, the appearance of the application catalog is tied to the active profile and reflects the customized ordering options.

6.3. Accessibility and personalization

Accessibility options must be associated with viewer profiles, in order to ensure persistence and the necessary interface for the respective settings to be applied across all initial applications to be used.

This interface must allow the viewer to select their preferred language, activate audio description, subtitles, sign language, voice guidance, or dialogue enhancement.

7. TV 3.0 tracks

7.1. TV 3.0 initial application track

Whenever the receiver offers themed navigation track in its user interface, it must assemble and present, in rail format, all initial applications listed in the application catalog.

The rail must be a mirror of the application catalog. Therefore, the rail must include both the native TV 3.0 initial applications and the TV 2.X initial applications (see Figure 9).
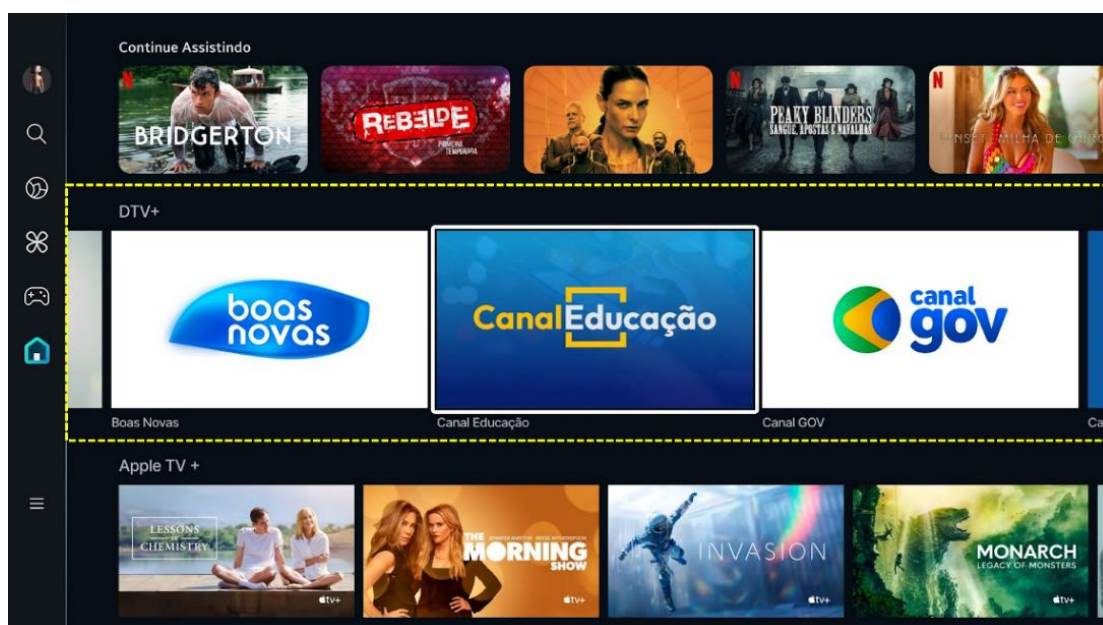

Figura 9: Example of DTV+ rail (indicated by the yellow dashed line).

It is also mandatory that all customization actions applied to the application catalog be reflected in the open TV track for each viewer profile.

The Figures included below in this document are intended to graphically detail the procedure for selecting and prioritizing icons in the application catalog through the "favorite" functionality.

The favorite functionality allows the viewer to highlight certain initial applications or groupings, creating a personalized and fixed list that precedes the other icons. The Figures presented show:

- Steps for selecting the icon in the catalog to apply the favorite state (Figures 10 and 12);
- Resulting reordering of the catalog, showing the precedence of favorite icons over others, without duplication (Figures 11 and 13);
- Persistence of personalization is associated with the viewer's active profile, ensuring that different profiles can maintain distinct arrangements;

- Integration with the defined usability model, in which non-favorited applications remain organized according to the signaling of the virtual channel, preserving consistency and predictability in navigation.

The illustrations complement the normative guidelines described, facilitating the understanding of the logic of visual and functional prioritization, in accordance with the principles of simplicity, accessibility, and standardization of the TV 3.0 ecosystem.
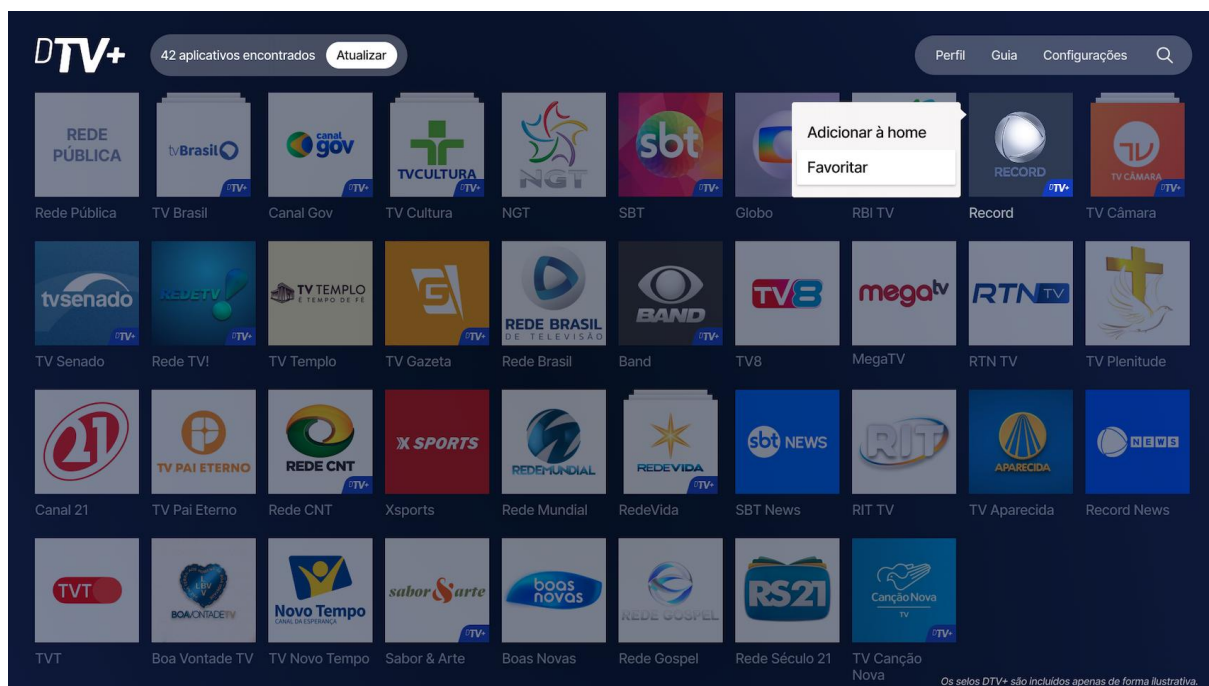

Figure 10*: Choice of favorite icon, manually, in the initial applications catalog*
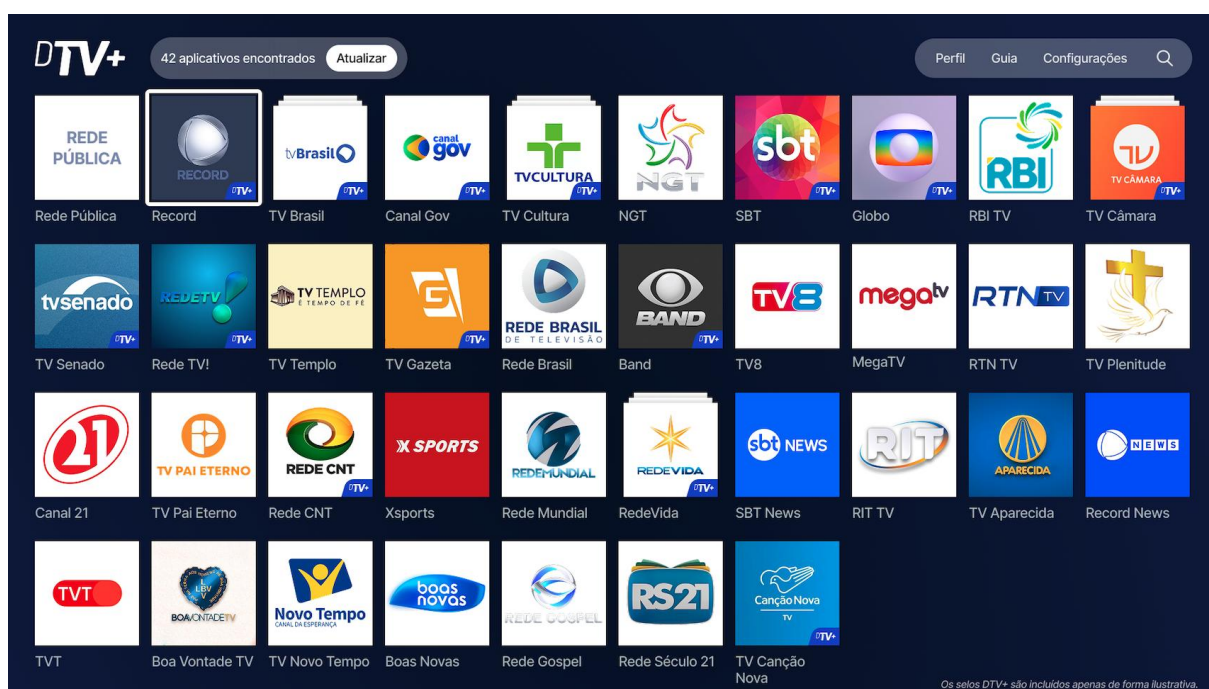
Figure 11 – Result of the favoriting performed, with the chosen icon placed at the beginning of the catalog.
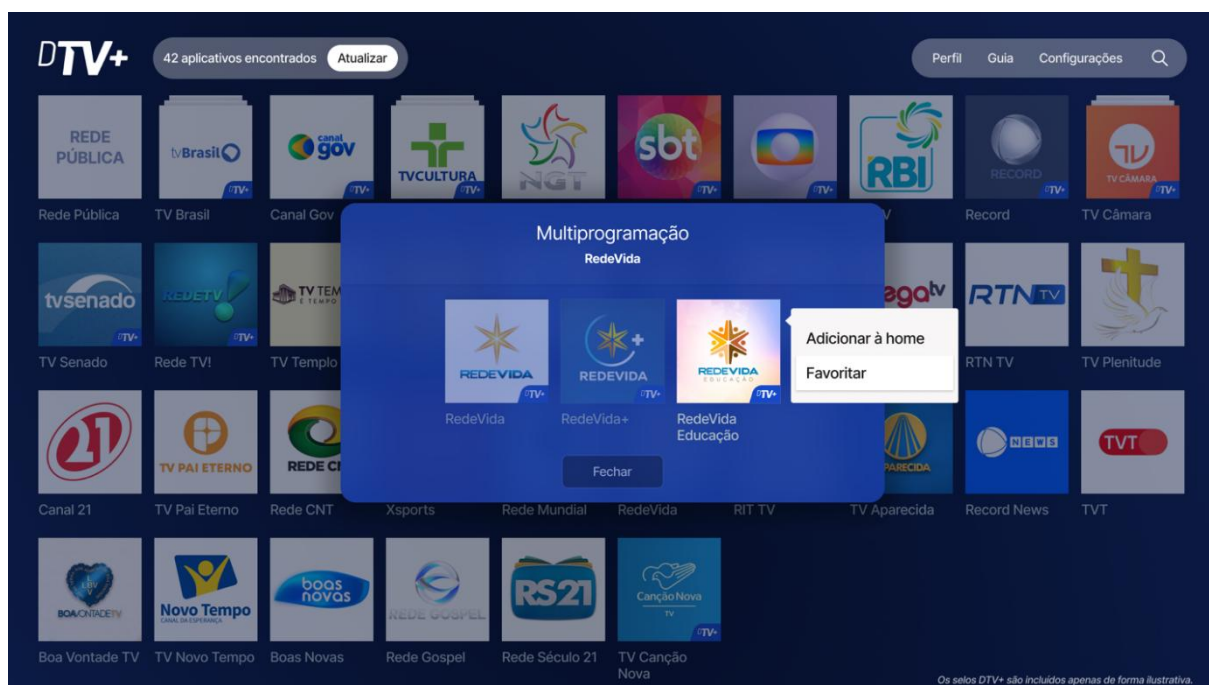

Figure 12: Favoriting of an icon included in a grouping, manually, in the initial applications catalog.
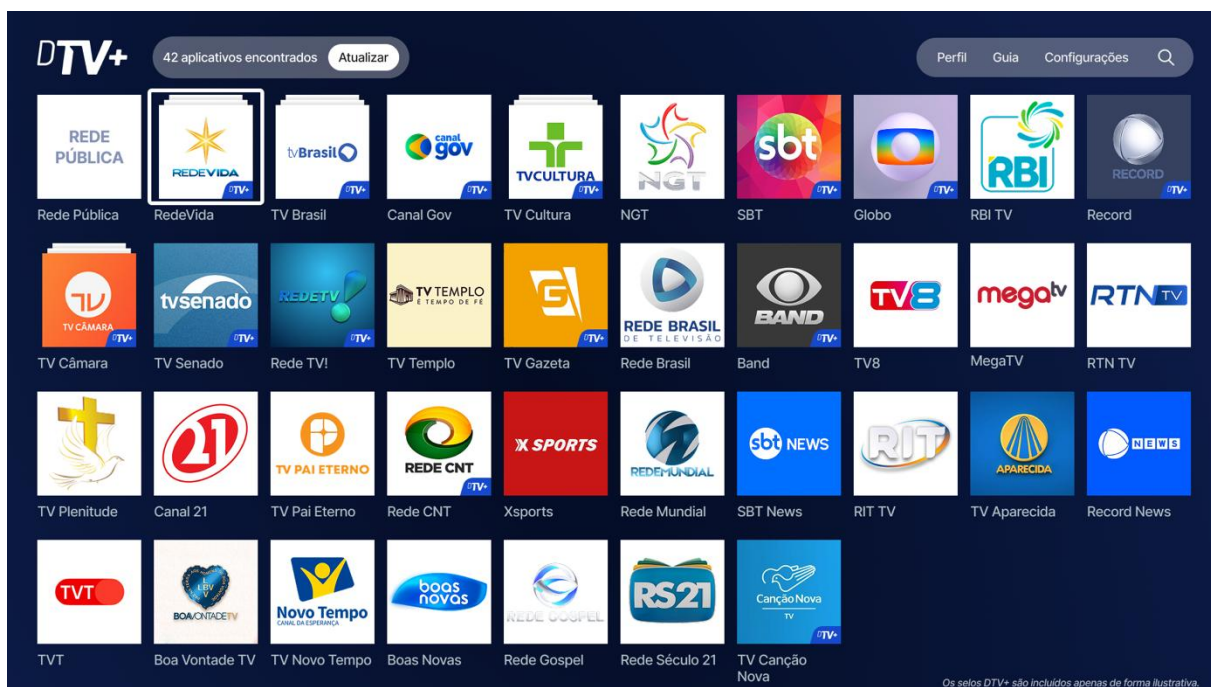
Figure 13 – *Result of the favoriting performed, in a grouping in the initial applications catalog.*

7.2. Recent content track

The filling of the recent content track must consider the consumption of content from the application catalog, guaranteeing a minimum of twenty percent (20%) of positions for the last initial applications accessed on broadcast TV.

The order of the recent content track must respect the most recently used initial applications, and the icons of the free-to-air TV stations in the app catalog can appear in any position on the rail.. However, if the viewer has used channels from other sources or other applications, the first positions, totaling 20% (twenty percent) of the track, will be for free-to-air TV channels.

8. Electronic guides and search and recommendation tools

TV 3.0 must provide two (2) guides accessible from the application catalog: (i) one (1) electronic programming guide (EPG) and (ii) one (1) electronic content guide (ECG).

The electronic programming guide (EPG) and the electronic content guide (ECG) are fully specified within the application catalog environment, that is, all information, thumbnails and metadata for the filling of these tools. These guides may not display content other than that of TV 3.0.

TV 3.0 content may be incorporated into the receiver's electronic programming guide, so that TV 3.0 and TV 2.X channels must always be listed before other linear services.

The EPG must display the linear programming schedule corresponding to the main audiovisual content of each initial application listed in the application catalog, from seven (7) days before the current day to seven (7) days after the current day. When a content in the schedule is available for on-demand consumption, the EPG signaling sent by the broadcaster (either over-the-air – OTA – or via the internet – OTT) may include a link to the content. Two types of links must be accepted: a direct link for playback of the media through the corresponding initial application, or a URL for playback of the media in a TV 3.0 secondary application.

This secondary application of the broadcaster may be persisted on the receiver or be made available via the internet, and may handle login/authentication on the platform chosen by the broadcaster when necessary for the playback of DRM-protected content (digital rights management); and it may use the resources of the TV 3.0 application execution environment to offer interactivity associated with the content or to use the audience measurement API.

The receiver must allow direct access to TV 3.0 content through the program thumbnail provided by the broadcaster.

The ECG must display, in separate lists for each initial application, the content signaled in the EPG in the interval of seven (7) days before the current day to seven (7) days after the current day, whose links for on-demand consumption have been made available. The ECG may not mix in the same list content related to different initial applications and may not include content that is not part of the linear programming schedule corresponding to the main audiovisual content of each initial application listed in the application catalog, from seven (7) days before the current day to seven (7) days after the current day.

The ECG may include, for each initial application, a link to a TV 3.0 secondary application for the availability of a more complete catalog of content corresponding to that initial application.

Regarding to search and recommendation tools, the receiver manufacturer must ensure equal treatment for TV 3.0 applications in relation to other linear services and VOD (video on demand) services available to the consumer.

9. Handling of TV 2.X signals

The input of current TV 2.X signals must be facilitated so that the viewer has the best experience during the migration and coexistence process between the current TV 2.X and TV 3.0. Therefore, it is mandatory that TV 3.0 receivers have the capacity to receive broadcast TV signals transmitted in accordance with the TV 2.X standard, in addition to the technological tools for reception and decoding of signals transmitted according to the TV 3.0 protocols.

To improve the integration of TV 2.X signals into a TV 3.0 receiver, the broadcaster may include, as additional information in its transmission, the broadcaster's logo to improve its presentation in the application catalog, as well as other metadata for the parameterization of the corresponding initial application. Whenever the broadcaster makes a TV 3.0 initial application available, its corresponding TV 2.X initial application will be replaced by the TV 3.0 initial application.

Similarly, viewer personalization options also apply to current TV 2.X signals, ensuring equal treatment in relation to TV 3.0 signals.

10. Remote control

The receiver's remote control must provide a button, with the DTV+ icon, for direct access to the application catalog.

The button must be clearly marked with the TV 3.0 trademark, DTV+, and in accordance with the brand application rules.

In the situation where the TV receiver is in standby mode, pressing the TV 3.0 button must activate it and then directly access the application catalog.

It is suggested that the remote control has the functionality of choosing the initial application through navigation buttons or through a positioning system over the application catalog, and the icon must have its outline visually highlighted as navigation develops.

Aneex A

Usability rules specific to Brazil

A.1. Groupings of initial applications

In compliance with Decree No. 12.595, of August 27, 2025, each legal entity granted the right to provide the broadcasting service of sounds and images and its ancillary services in Brazil is entitled to transmit one TV 3.0 initial application and to use a single icon in the application catalog. If a granted legal entity is authorized to transmit more than one program, its initial applications must signal belonging to a single mandatory grouping.

The icons of the initial applications referring to the following programming of broadcasters assigned to the Union will be presented in the order of sequence of the virtual channel numbering of the first generation of SBTVD-T, in each locality, including in cases of multiple programming transmission on a single radiofrequency channel:

a) the federal public broadcaster;
b) the federal government news channel, next to the one mentioned in item "a";
c) the Federal Senate;
d) the Chamber of Deputies, next to the one mentioned in item "c"; and
e) the Federal Supreme Court.

The initial applications referring to programming of Union-assigned broadcasters not listed above must be signaled as belonging to an optional grouping. These icons must be presented in sequence, after the last virtual channel in operation in the municipality, respecting the limit of forty fully visible icons.

If the limit of forty icons in the application catalog is exceeded in a locality, the TV 3.0 receiver must group the initial applications of Union-assigned broadcasters, except for the five initial applications explicitly listed above, which must remain visible, provided they are received by broadcast signal.

If a Union-assigned broadcaster listed above carries programming from granted legal entities in its radiofrequency channel, the initial applications corresponding to such programming must signal belonging to a mandatory grouping with the initial application of the Union-assigned broadcaster responsible for the carriage.

A.2. Common Platform for Public Communication and Digital Government of TV 3.0

The application catalog must also include the icon related to the Common Platform for Public Communication and Digital Government of TV 3.0, which will be a digital environment intended to gather content and applications from public entities of all federal Powers.

This Common Platform for Public Communication and Digital Government will be readily accessible in the application catalog, in the first position, and its position may not be altered by the viewer.

The Common Platform for Public Communication and Digital Government must be automatically loaded into the application catalog through an internet connection in receivers with network access capability and kept persistently installed on the television. This application will be made available at a fixed internet address, and the platform's base file must be queried by TV 3.0 receivers whenever there is a search or update of initial applications in the application catalog.