1 Scope

This document is a companion to ABNT NBR 25608:2025 and its annexes, providing complementary implementation guidelines intended to clarify architectural intent and operational behavior. It does not define normative requirements, but describes recommended practices, supports consistent interpretation of the standard, and promotes interoperable TV 3.0 Application-oriented Platform (AoP) implementations.

2 References

The following documents are cited in the text in such a way that their contents, in whole or in part, constitute requirements for this document. For dated references, only the editions cited apply. For undated references, the most recent editions of that document (including amendments) apply.

ABNT NBR 15603-2:2023, *Digital terrestrial television – Multiplexing and service information (SI) – Part 2: Data structure and definition of basic information of SI*

ABNT NBR 15603-2:2026, *Digital terrestrial television – Multiplexing and service information (SI) – Part 2: Data structure and definition of basic information of SI (under revision)*

ABNT NBR 15606-2, *Digital terrestrial television – Data coding and transmission specification for digital broadcasting – Part 2: Ginga-NCL for fixed and mobile receivers – XML application language for application coding*

ABNT NBR 15606-7, *Digital terrestrial television – Data coding and transmission specification for digital broadcasting – Part 7: Ginga-NCL – Operational Guidelines for ABNT NBR 15606-2 and ABNT NBR 15606-5*

ABNT NBR 15606-11, *Digital terrestrial television – Data coding and transmission specification for digital broadcasting – Part 11: Ginga CC WebServices – Ginga Common Core WebServices specification*

ABNT NBR 15606-12, *Digital terrestrial television – Data coding and transmission specification for digital broadcasting – Part 12: Ginga CC WebServices – Operational guidelines for ABNT NBR 15606-11*

ABNT NBR 25602, *TV 3.0 – Transport Layer*

ABNT NBR 25608:2025, *TV 3.0 – Application Coding*

3 Terms and Definitions

For the purposes of this Document, the terms and definitions specified by ABNT NBR 25608:2025 apply. Additionally, the following terms and definitions apply.

No further terms and definitions are included in this Document.

4 Abbreviations

For the purposes of this Document, the following abbreviations apply.

ABNT	*Associação Brasileira de Normas Técnicas*
AoP	*Application-oriented Platform*

API	*Application Programming Interface*
ATSC	*Advanced Television Systems Committee*
BALD	*Broadcaster Application Location Description*
BAM	*Bootstrap Application Manifest*
BAMT	*Bootstrap Application Manifest Table*
DASH	*Dynamic Adaptive Streaming over HTTP*
DPV	*Data Privacy Vocabulary*
DTV	*Digital TeleVision*
ECG	*Electronic Content Guide*
EIT	*Event Information Table*
EPG	*Electronic Programming Guide*
HLS	HTTP Live Streaming
HTML5	*HyperText Markup Language version 5*
HTTP	*HyperText Transfer Protocol*
HTTPS	*HTTP Secure*
MPD	*Media Presentation Description*
NCL	*Nested Context Language*
NRT	*Non-Real Time*
PBDS	*Private Base Data Structure*
PD	*Personal Data Categories*
PII	*Personal Identifiable Information*
PMP	*Persistent Media Player*
PRRD	*Privacy Record Request Description*
RP	*Receiver Platform*
SBTVD	*Sistema Brasileiro de TV Digital*
SDT	*Service Description Table*
SLS	*Service Layer Signaling*

URI	*Uniform Resource Identifier*
URL	*Uniform Resource Locator*
W3C	*World Wide Web Consortium*
XML	*eXtensible Markup Language*
XSD	*XML Schema Definition*

5 Introduction

This document is a companion to ABNT NBR 25608:2025 and its annexes, providing complementary implementation guidelines intended to clarify architectural intent and operational behavior. It does not define normative requirements, but describes recommended practices, supports consistent interpretation of the standard, and promotes interoperable TV 3.0 platform implementations.

The operational guidelines addressing the architectural aspects of TV 3.0 Application Coding and its Application-Oriented Platform are presented in the main body of this document. Guidelines related to specific technologies and regulatory aspects employed in TV 3.0 Application Coding are provided in the annexes that follow.

- Annex A contains the guidelines on NCL 4.0 and TV 3.0 Ginga-NCL;
- Annex B contains the guidelines on TV 3.0 HTML5;
- Annex C contains the guidelines on TV 3.0 WebServices guidelines;
- Annex D contains the guidelines on NCLua for TV 3.0 Ginga-NCL; and
- Annex E contains the guidelines on Regulatory Compliance Requirements for Brazil.

6 TV 3.0 application coding architecture

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 6 apply.

7 TV 3.0 Ginga Common Core

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7 apply.

7.1 Over-the-air physical layer information

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.1 apply.

7.2 Transport layer metadata

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.2 apply.

7.3 DASH streams

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.3 apply.

7.4 HLS streams

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.4 apply.

7.5 Non-Real Time Files

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.5 apply.

7.6 Persistent Media Player

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.6 apply.

The Persistent Media Player (PMP) is a core component of the TV 3.0 AoP, defined in ABNT NBR 25608:2025, Section 7.6. Its control APIs are specified in TV 3.0 WebServices (Annex C of ABNT NBR 25608:2025).

In a TV 2.X/TV 3.0 Receiver Platform (RP), Bootstrap Applications associated with TV 2.X services may need to instruct the PMP to start playing content, as required by BpAFR-07 of ABNT NBR 25608:2025, Subsection 8.4.2. The implementation is responsible for ensuring that the PMP provides appropriate support for both TV 2.X and TV 3.0 services, while maintaining proper environment isolation as described in Section 11 of this Document. Broadcaster Applications transmitted as part of TV 2.X services should access PMP functionality exclusively through TV 2.X-compliant interfaces, without requiring modifications to the application code or awareness of TV 3.0-specific features.

7.7 Platform capabilities and attributes

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.7 apply.

7.8 Sensory Effect Renderers

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.8 apply.

7.9 Interaction Modules

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.9 apply.

7.10 Audience Measurement Manager

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.10 apply.

7.11 Private Base Manager

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 7.11 apply.

8 Application Catalog

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8 apply.

8.1 General aspects

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.1 apply.

8.2 Functional requirements

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.2 apply.

8.3 Non-functional requirements

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.3 apply.

8.4 Bootstrap Applications

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.4 apply.

In TV 2.X/TV 3.0 receivers processing TV 2.X transmissions, when a BAMT is detected, as defined in ABNT NBR 15603-2:2026, the information contained in this table should be used to derive the Bootstrap Application Manifest data, as described in ABNT NBR 25608:2025 (Section 8.4.4).

When no BAMT is present in a TV 2.X transmission, the Bootstrap Application Manifest data is derived according to the following recommended rules:

- `BAMT@groupingType`: set to "`mandatoryGrouping`", corresponding to the default value defined in BAMT XML schema included in the compressed ZIP folder associated with ABNT NBR 25608:2025.
- `BAM@appName`: obtained from Service Descriptor in SDT, as specified in ABNT NBR 15603-2:2023, Section 8.3.13.
- `BAM@appDescription`: set to an empty string.
- `BAM@backgroundColor`: defined by the implementer of the standard.
- `BAM@foregroundColor`: defined by the implementer of the standard.
- `BAM/appIcon`: defined by the implementer of the standard.
- `BAM/bannerIcon`: defined by the implementer of the standard.

For additional guidelines on Bootstrap Application Manifests under provisions specific to the Brazilian regulatory context, see Section E.1.

8.5 Electronic Programming Guide (EPG)

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.5 apply.

For operational guidelines regarding EPG harmonization of TV 2.X/TV 3.0 receiver platform (RP), refer to Section 11 of this Document.

8.6 Electronic Content Guide (ECG)

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.6 apply.

8.7 Profile Manager

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.7 apply.

8.8 Privacy Manager

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.8 apply.

8.8.1 General aspects

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.8.1 apply.

8.8.2 Privacy record request

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.8.2 apply.

The Privacy Record Request Description (PRRD) is the mechanism through which DTV services formally declare their intended processing of viewers' personal data. PRRD is defined as an XML fragment embedded in the Service Layer Signaling (SLS) (see ABNT NBR 25602), following the fragment-based signaling model established in ATSC A/331 and adopted within the TV 3.0 architecture. As a signaling fragment, PRRD is transmitted as part of the broadcast flow and interpreted directly by TV 3.0 AoP, independently of Broadcaster Applications' logic. All elements and attributes discussed in this guideline therefore correspond to XML constructs defined within the PRRD fragment.

Broadcasters that do not engage in the processing of viewers' personal data are not required to signal a Privacy Record Request Description (PRRD). In such cases, the absence of a PRRD implicitly indicates that no personal data is collected, accessed, or processed within the scope of the associated TV 3.0 service. This determination is made by the broadcaster based on its own interpretation of the applicable data protection legislation, the nature of the service offered, and the categories of data involved. This exemption simplifies signaling and platform behavior for services that rely exclusively on broadcast delivery and do not invoke sensitive APIs. When no PRRD is announced, TV 3.0 AoP does not invoke the Privacy Manager workflow for that service. Should a broadcaster later introduce any form of personal data processing, the corresponding PRRD should then be signaled to accurately declare the new processing context and enable viewer awareness and control.

The PRRD specification builds upon established international standards rather than redefining privacy semantics. ISO/IEC 27560 [1] provides the conceptual foundation for structured records and receipts documenting data processing decisions, while the W3C Data Privacy Vocabulary (DPV) [2] and Personal Data Categories (PD) [3] vocabularies provide standardized identifiers for lawful bases, purposes, personal data categories, and actor roles. These vocabularies are reused as semantic building blocks and integrated into DTV service signaling and platform-level interpretation. This approach ensures clarity and machine-readability while addressing the specific requirements of personalized experiences under TV 3.0.

At a conceptual level, PRRD represents a service-scoped, machine-readable declaration of data processing intentions issued by the broadcaster. Its role is to establish the processing context that allows the Privacy Manager to determine whether viewer interaction is required, how privacy management interfaces shall be rendered, and which enforcement rules shall apply once decisions are expressed. PRRD precedes and conditions the generation of privacy records and privacy receipts; it does not record viewer choices, but instead defines the purposes, lawful bases, and data categories against which those choices will later be expressed and enforced.

This declarative role is concretely realized through explicit identification and versioning at the PRRD level. Each PRRD instance is uniquely identified by the `schemaVersion` attribute of the root PRRD element. The Privacy Manager uses this identifier to distinguish between new declarations and previously processed ones. Any modification to declared purposes, lawful bases, personal data categories, recipients, retention parameters, or other semantically relevant elements should result in a new version identifier. This mechanism ensures that viewer decisions are always associated with the exact processing context in effect at the time of interaction and provides a deterministic trigger for re-evaluating privacy choices whenever that context changes.

An illustrative PRRD instance demonstrating multilingual declarations, multiple purposes with different lawful bases, associated personal data categories, and participating parties is provided in Listing 1. This example is cited throughout the present guideline solely to support understanding of PRRD structure and semantics. The specific values used in the example do not prescribe or recommend particular processing practices.

PRRD organizes its content through one or more `piiProcessing` elements, which serve as the top-level containers for viewer-facing privacy information. Each `piiProcessing` element corresponds to a specific language, identified by `piiProcessing@language`, and encapsulates all textual and presentational content required to render the privacy management interface in that language. This includes references to the applicable privacy notice (`piiProcessing@privacyNotice`), a broadcast-accessible copy of that notice (`piiProcessing@broadcastNotice`), the secure endpoint for privacy record delivery (`piiProcessing@deliveryUrl`), and the initial disclaimer presented in simplified privacy views (`initialDisclaimer`). All `piiProcessing` elements within a PRRD are expected to be semantically equivalent, differing only in language, so that the same processing intentions are consistently expressed across locales, as illustrated in Listing 1. Additional guidelines regarding the `piiProcessing@broadcastNotice` attribute can be found in Section 8.8.7.

Within each `piiProcessing` block, processing intentions are declared through one or more `purpose` elements. Each `purpose` represents a distinct data processing activity and is uniquely identified by the `purpose@id` attribute. The textual content of the `purpose` element describes the processing activity in natural language, in the language specified by the enclosing `piiProcessing` element. This description should be sufficiently detailed and unambiguous to enable the viewer to understand the intended processing of their personal data. Multiple purposes may be declared within the same PRRD, and purposes do not share a single lawful basis.

Each `purpose` is semantically classified through the `purpose@type` attribute, which adopts terms from the W3C Data Privacy Vocabulary. Examples of DPV purpose types include, but are not limited to, `dpv:ServiceUsageAnalytics`, `dpv:ServiceOptimisation`, `dpv:PersonalisedAdvertising`, `dpv:TargetedAdvertising`, `dpv:AccountManagement`, `dpv:AgeVerification`, `dpv:PoliticalCampaign`, and `dpv:CommercialPurpose`. The purpose type complements the natural-language description and enables consistent interpretation, interface behavior, and enforcement logic at the

platform level. The example in Listing 1 illustrates the use of different purpose types across consent-based and non-consent-based processing.

The legal justification for each `purpose` is declared exclusively through the `purpose@lawfulBasis` attribute. This attribute also adopts DPV terms, such as `dpv:Consent`, `dpv:LegitimateInterest`, `dpv:Contract`, `dpv:LegalObligation`, `dpv:PublicInterest`, `dpv:VitalInterest`, and `dpv:OfficialAuthorityOfController`. The distinction between consent-based and non-consent-based processing is expressed solely through the value of this attribute. The choice of lawful basis is the responsibility of the broadcaster and reflects its own legal interpretation, organizational practices, and the nature of the data involved. The PRRD mechanism itself is agnostic to particular lawful bases and does not impose legal interpretation, a principle reflected in the example provided in Listing 1.

For each declared `purpose`, PRRD specifies the personal data categories involved through one or more pii elements within the `piiInformation` structure. Each `pii` element combines a human-readable description with a standardized classification expressed via the `pii@type` attribute, which adopts terms from the W3C Personal Data Categories vocabulary. Examples include `pd:Profile`, `pd:DeviceBased`, `pd:UID`, `pd:Location`, `pd:TVViewingBehavior`, `pd:Behavioral`, `pd:Tracking`, and `pd:Preference`. The optionality of each data category is explicitly indicated (`pii@optional`), allowing broadcasters to distinguish between mandatory and optional data for a given purpose, as illustrated in Listing 1.

The `piiInformation` structure also includes contextual attributes relevant for transparency and rights awareness, such as storage locations, retention periods, applicable jurisdiction, third-party recipients, withdrawal mechanisms, and supervisory authorities. These elements should accurately reflect the broadcaster's data handling practices and provide viewers with meaningful contextual information regarding the processing of their personal data.

All entities involved in the declared processing are identified in the `partyIdentification` section. Each party is assigned a role using DPV actor types such as `dpv:DataController`, `dpv:DataProcessor`, `dpv:Recipient`, `dpv:ServiceConsumer`, or `dpv:DataProtectionAuthority`. Identifiers declared in this section are referenced throughout PRRD to associate purposes and personal data categories with the corresponding actors, ensuring consistency between declared processing intentions and responsible entities. The structure and use of party identifiers are exemplified in Listing 1 too.

```
<?xml version="1.0" encoding="UTF-8"?>
<PRRD xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="tag:sbtvd.org.br,2025:XMLSchemas/TV30/AppSignaling/PRRD/1.0/PRRD-1.0-20250711.xsd"
   xmlns="tag:sbtvd.org.br,2025:XMLSchemas/TV30/AppSignaling/PRRD/1.0/"
   xmlns:pd="https://w3id.org/dpv/pd#" xmlns:dpv="https://w3id.org/dpv#"
   schemaVersion="PRRD-1.0-ABC-20251013">
   <!-- Privacy Record Request for broadcaster ABC, version 20251013 -->
   <!-- ========================
     Portuguese version (pt-BR)
     ======================== -->
   <piiProcessing privacyNotice="https://www.abc.tv/privacy/br/notice_20251013.html"
      language="pt-BR" broadcastNotice="http://tv30.abc.tv/appCtx1/privacy/notice_20251013br.html"
      deliveryUrl="https://privacy.abc.tv/record/submit">
      <initialDisclaimer>
         Este serviço de TV 3.0 processa dados pessoais para oferecer funcionalidades personalizadas.
         Revise as finalidades e selecione suas preferências.
      </initialDisclaimer>
      <purposes>
         <!-- Purpose 1: Consent-based (Advertising Personalization) -->
         <purpose id="br_p1" type="dpv:PersonalisedAdvertising" lawfulBasis="dpv:Consent">
            Exibição de anúncios personalizados com base no histórico de visualização.
            <piiInformation>
               <pii type="pd:TVViewingBehaviour" optional="true">Histórico de programas assistidos</pii>
               <pii type="pd:DeviceBased" optional="true">Identificadores do dispositivo</pii>
               <pii type="pd:UID" optional="true">Identificador publicitário</pii>
```

```
            <pii type="pd:Location" optional="true">Localização aproximada do espectador</pii>
            <piiControllers>
              <partyId>ABC-TV</partyId>
            </piiControllers>
            <storageLocations>BR</storageLocations>
            <retentionPeriod>P90D</retentionPeriod>
            <jurisdiction>BR</jurisdiction>
            <recipientThirdParties>
              <partyId>AdPartner123</partyId>
            </recipientThirdParties>
            <withdrawalMethod>TV30AoP-privacyManager</withdrawalMethod>
            <authorityParty>ANPD</authorityParty>
          </piiInformation>
        </purpose>
        <!-- Purpose 2: Legitimate interest (Service analytics) -->
        <purpose id="br_p2" type="dpv:ServiceOptimisation" lawfulBasis="dpv:LegitimateInterest">
          Coleta de métricas de uso para melhoria do serviço e estabilidade de transmissão.
          <piiInformation>
            <pii type="pd:DeviceBased" optional="false">
            Identificadores, configurações e telemetria do dispositivo</pii>
            <piiControllers>
              <partyId>ABC-TV</partyId>
            </piiControllers>
            <storageLocations>BR</storageLocations>
            <retentionPeriod>P180D</retentionPeriod>
            <jurisdiction>BR</jurisdiction>
            <recipientThirdParties>
              <partyId>AnalyticsProviderXYZ</partyId>
            </recipientThirdParties>
            <withdrawalMethod>TV30AoP-privacyManager</withdrawalMethod>
            <authorityParty>ANPD</authorityParty>
          </piiInformation>
        </purpose>
      </purposes>
    </piiProcessing>
    <!-- ==========================
      English version (en-US)
      ========================== -->
    <piiProcessing privacyNotice="https://www.abc.tv/privacy/en/notice_20251013.html"
      language="en-US" broadcastNotice="http://tv30.abc.tv/appCtx1/privacy/notice_20251013en.html"
      deliveryUrl="https://privacy.abc.tv/record/submit">
      <initialDisclaimer>
        This TV 3.0 service processes personal data to provide personalized features.
        Review the purposes and select your preferences.
      </initialDisclaimer>
      <purposes>
        <!-- Purpose 1: Consent-based (Advertising Personalization) -->
        <purpose id="en_p1" type="dpv:PersonalisedAdvertising" lawfulBasis="dpv:Consent">
          Display of personalized advertisements based on viewing history.
          <piiInformation>
            <pii type="pd:TVViewingBehaviour" optional="true">Television viewing history</pii>
            <pii type="pd:DeviceBased" optional="true">
            Device identifiers used for profile association</pii>
            <pii type="pd:UID" optional="true">Advertising identifier used for targeted ads</pii>
            <pii type="pd:Location" optional="true">Approximate viewer location</pii>
            <piiControllers>
              <partyId>ABC-TV</partyId>
            </piiControllers>
            <storageLocations>BR</storageLocations>
            <retentionPeriod>P90D</retentionPeriod>
            <jurisdiction>BR</jurisdiction>
            <recipientThirdParties>
              <partyId>AdPartner123</partyId>
            </recipientThirdParties>
```

```
            <withdrawalMethod>TV30AoP-privacyManager</withdrawalMethod>
            <authorityParty>ANPD</authorityParty>
          </piiInformation>
        </purpose>
        <!-- Purpose 2: Legitimate interest (Service analytics) -->
        <purpose id="en_p2" type="dpv:ServiceOptimisation" lawfulBasis="dpv:LegitimateInterest">
          Collection of usage metrics to improve service quality and transmission stability.
          <piiInformation>
            <pii type="pd:DeviceBased" optional="false">
            Device identifiers, settings and telemetry for diagnostics</pii>
            <piiControllers>
              <partyId>ABC-TV</partyId>
            </piiControllers>
            <storageLocations>BR</storageLocations>
            <retentionPeriod>P180D</retentionPeriod>
            <jurisdiction>BR</jurisdiction>
            <recipientThirdParties>
              <partyId>AnalyticsProviderXYZ</partyId>
            </recipientThirdParties>
            <withdrawalMethod>TV30AoP-privacyManager</withdrawalMethod>
            <authorityParty>ANPD</authorityParty>
          </piiInformation>
        </purpose>
      </purposes>
    </piiProcessing>
    <!-- ============================
      Party Identification
      ============================ -->
    <partyIdentification>
      <party id="ABC-TV" type="dpv:DataController">
        <partyName>ABC Televisão S.A.</partyName>
        <partyAddress>Avenida das Comunicações, 1000 – São Paulo, SP – Brasil</partyAddress>
        <partyContact>mailto:privacidade@abc.tv</partyContact>
      </party>
      <party id="AdPartner123" type="dpv:DataProcessor">
        <partyName>AdPartner Brasil Ltda.</partyName>
        <partyAddress>Rua dos Anunciantes, 500 – Rio de Janeiro, RJ – Brasil</partyAddress>
        <partyContact>mailto:privacy@adpartner.com</partyContact>
      </party>
      <party id="AnalyticsProviderXYZ" type="dpv:DataProcessor">
        <partyName>Analytics Provider XYZ Ltda.</partyName>
        <partyAddress>Rua das Métricas, 42 – Curitiba, PR – Brasil</partyAddress>
        <partyContact>mailto:lgpd@analyticsxyz.com</partyContact>
      </party>
      <party id="ANPD" type="dpv:DataProtectionAuthority">
        <partyName>Autoridade Nacional de Proteção de Dados (ANPD)</partyName>
        <partyAddress>
          Setor Comercial Norte – SCN, Quadra 6, Conjunto A,
          Edifício Venâncio 3000, Bloco A, 9º andar – CEP 70716-900 – Brasília, DF – Brasil
        </partyAddress>
        <partyContact>mailto:protocolo@anpd.gov.br</partyContact>
      </party>
    </partyIdentification>
</PRRD>
```

Listing 1. Example of a Privacy Record Request Description (PRRD) instance illustrating multilingual purpose declarations and lawful basis attribution.

Further guidance on data access, data minimization, and privacy-related practices in the TV 3.0 environment is provided in the *Data Access and Privacy Guide* [4], produced by the Intellectual Property Module of the SBTVD Forum. That guide elaborates recommended practices for data processing, user profile handling, and privacy management, with the objective of ensuring that only data strictly necessary for service operation and personalization is processed.

8.8.3 Privacy record

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.8.3 apply.

8.8.4 Privacy receipt

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.8.4 apply.

8.8.5 Privacy management graphical views

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.8.5 apply.

8.8.6 Functional requirements

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.8.6 apply.

8.8.7 Delivery of privacy notice via broadcast

The `PRRD.piiProcessing@broadcastNotice` is defined as `xs:anyURI` and described in ABNT NBR 25608:2025, Table 8, as the location (a URI) of a privacy notice copy in the broadcast service for offline viewing. Under the current specification, however, the receiver cannot deterministically resolve this URI in the broadcast environment, because access to NRT files depends on a base URI correspondent to an Application Context, and no such context is defined for this purpose in the PRRD processing model. As a result, the current specification does not provide a reliable way to locate broadcaster privacy terms through `broadcastNotice` in offline scenarios. Operationally, implementers should recognize that, with the specification as it stands, privacy terms referenced through `broadcastNotice` may be unavailable to receivers that are not connected to the Internet, and no interoperable broadcast-only resolution mechanism should be assumed until a normative solution is defined.

8.8.8 Privacy-related XML schema files

The supplementary files referenced in ABNT NBR 25608:2025 contain a set of metadata and information associated with the standard and constitute an integral part of its normative content. Privacy-related XML schema files are included.

There is a mismatch between a normative statement in ABNT NBR 25608:2025, Section 8.8.2, and the current XML Schema definition (`PRRD-1.0-202511.xsd`) of the `recipientThirdParties` element. ABNT NBR 25608:2025 Table 8 indicates that, when no *Personal Identifiable Information* (PII) is shared, `recipientThirdParties` should contain no child `partyId` elements; however, the normative XSD defines `partyId` with `minOccurs="1"`, which means that an empty element does not pass schema validation. This reflects ABNT NBR 25608:2025 definition of `partyId` cardinality (1..N) also in Table 8. To preserve compliance with the current XSD while maintaining alignment with ISO/IEC 27560, Privacy Manager implementations should require the presence of `recipientThirdParties` and, when no third-party recipients exist, accept a declared `partyId` element with empty content.

As of the publication date of these operational guidelines, the `privacyRecord-1.0-202511.xsd` file has been corrected so that the identifier included as a child element of `event` is `entityId`, in accordance with ABNT NBR

25608:2025, Table 9. Implementations should therefore use `entityId` and disregard `eventId` in earlier versions of the schema file.

8.9 Access Panel

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 8.9 apply.

9 Remote devices

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 9 apply.

10 TV 3.0 AoP general aspects

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10 apply.

10.1 Broadcaster Application Location Description (BALD)

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10.1 apply.

10.2 Graphic overlays

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10.2 apply.

10.3 Memory requirements

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10.3 apply.

10.4 TV 3.0 HTTP User-Agent header field

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10.4 apply.

10.5 APIs IDs and versioning

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10.5 apply.

10.6 Remote-control functions

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10.6 apply.

Table 11 of ABNT NBR 25608 lists the remote-control functions applicable to TV 3.0, most of which are mandatory. These functions can be made available through physical keys on the remote control or other equivalent mechanisms, such as on-screen buttons. An exception applies to the “TV +”, “TV -” and “TV 3.0” functions, which, according to ABNT NBR 25609, 13.2, shall be implemented as physical keys.

It is expected that mandatory remote-control functions are always available to the TV 3.0 AoP component or the application (Bootstrap Application or Broadcaster Application) that is activated by them. Thus, if the option is to implement functions as on-screen buttons instead of physical keys, those not applicable in a given context can be omitted, while those applicable are expected to be displayed.

Specifically regarding the “Audio Settings”, “Closed Captioning”, “Audio Description”, “Closed Signing”, and “Dialog Enhancement” functions, it should be noted that there may be functional overlap with the configuration of audio, captioning and accessibility features provided by the Access Panel, as specified in requirement APFR-04 of ABNT NBR 25608. In such cases, the simultaneous presentation of two distinct visual features that lead to the same configuration operation tends to be redundant and potentially confusing for the viewer. Thus, when such features are intended for the PMP, it is understood that it is sufficient to make them available through a single interface mechanism, either as on-screen buttons or as items in the Access Panel.

However, in the specific case of an active Broadcaster Application, when the PMP is inactive (i.e., when there is no audiovisual content being played by it) and these remote control functions are passed to the Broadcaster Application as key events, it is recommended to use on-screen buttons instead of the Access Panel items, favoring the viewer's perception that they are intended for the application, which, in turn, can provide its own interface features for the viewer to make the related configurations.

10.7 Virtual keyboard

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10.7 apply.

10.8 Broadcaster Applications fonts and character encoding

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section 10.8 apply.

11 Harmonization of TV 2.X/TV 3.0 support

11.1 Application Execution Environment

In a TV 2.X/TV 3.0 receiver platform (RP) receiving a TV 2.X service, Broadcaster Applications associated with that service should be executed strictly within the TV 2.X application environment, compliant with the ABNT NBR 15606 series. The application environment behavior exposed to the application should be equivalent to that of a TV 2.X-only environment.

TV 2.X/TV 3.0 RPs are expected to be compliant with the ABNT NBR 15606 series when receiving TV 2.X services. Features mandated by the TV 2.X standards – such as support for the EXIT key or the image graphic plane – should be available in this context.

Broadcaster Applications associated with TV 2.X services should not assume any form of forward compatibility when executed on a TV 3.0 AoP. Capabilities introduced by TV 3.0 standards, such as additional remote-control keys or APIs should not be visible or accessible to Broadcaster Applications transmitted as part of a TV 2.X service.

Remote control key registration and handling for Broadcaster Applications associated with TV 2.X services should follow the semantics and return conditions defined in ABNT NBR 15606-2, ABNT NBR 15606-7, ABNT NBR 15606-11 and ABNT NBR 15606-12. Only keys defined by the TV 2.X specifications should be exposed to the application.

11.2 Electronic Programming Guide (EPG)

In a TV 2.X/TV 3.0 RP, specific limitations apply to the EPG. For TV 2.X services, the EPG should be populated based on information carried in the Event Information Table (EIT), in accordance with the following guidelines:

- Only program information obtained from EIT should be displayed in the EPG.
- The programming period presented by the EPG should be limited to the one defined by the EIT data received
- Functional requirement EPGFR-01 (ABNT NBR 25608:2025, Section 8.5.2) should not be considered applicable when the program information provided by EIT does not span the period specified in EPGFR-01.
- Functional requirement EPGFR-02 (ABNT NBR 25608:2025, Section 8.5.2) should not be considered applicable, as on-demand content identified by URL is not supported in the EPG for TV 2.X services.
- When a program entry is not specified in the EIT, the corresponding EPG item should be presented as empty.

Annex A

NCL 4.0 and TV 3.0 Ginga-NCL

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Annex A apply.

A.1 Introduction

This Annex details and explains recommendations and behavior of NCL 4.0 APIs and TV 3.0 Ginga-NCL presentation engine, as supported by the TV 3.0 Application-oriented Platform defined in ABNT NBR 25608:2025. It provides operational guidelines for an implementation of TV 3.0 Ginga-NCL according to ABNT NBR 25608:2025, Annex A.

A.2 NCL as glue language

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.2 apply.

A.3 NCL 4.0 specification

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3 apply.

A.3.1 General aspects

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.1 apply.

A.3.2 NCL specification summary

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.2 apply.

A.3.3 NCL Structure API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.3 apply.

A.3.4 NCL Layout API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.4 apply.

A.3.5 NCL Components API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.5 apply.

A.3.6 NCL Interfaces API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.6 apply.

As stated in Section A.3.6 of ABNT NBR 25608:2025, except for `<media>` elements of type `application/x-ginga-time`, the begin and end attributes of an `<area>` element are specified using one of the following syntaxes:

1. Local time of day with decimal fraction representation, as defined in ISO 8601-1;
2. Internet Date/Time Format, as defined in IETF RFC 9557;
3. "`<seconds>s`", where <seconds> is a positive integer.

When the "`<seconds>s`" syntax (option 3) is used, the specified time is interpreted as relative to the beginning of the presentation of the associated `<media>` element. That is, it represents an offset, in seconds, from the instant at which the `<media>` presentation event enters the occurring state. This option can be applied to any type of `<media>` content.

When the Internet Date/Time Format syntax (option 2), as defined in RFC 9557, is used, the specified time represents an absolute instant on the UTC timeline, including both date and time information. This representation is appropriate when the `<media>` content is delivered using real-time or live streaming mechanisms whose synchronization model is explicitly based on UTC and whose signaling allows receivers to map wall-clock time to the media timeline. Examples include ROUTE/DASH, MPEG-DASH, and HLS services that provide UTC-aligned timing metadata. If the Internet Date/Time Format syntax (option 2) is used when the `<media>` content is not delivered using real-time or live streaming mechanisms, implementations are recommended to ignore the corresponding `<area>` element.

When the local time of day with decimal fraction syntax defined in ISO 8601-1 (option 1) is used, the specified time includes only hours, minutes, and seconds, without any date component. In this context, the time is interpreted as relative to the beginning of the presentation of the associated `<media>` element, rather than as a wall-clock time of day. It therefore represents an offset from the instant at which the `<media>` presentation event enters the occurring state. This syntax can be understood as an alternative representation to option 3 and may be preferred when expressing large offsets, as it can improve readability and comprehension. This option can be applied to any type of `<media>` content.

A.3.7 NCL Presentation Specification API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.7 apply.

A.3.8 NCL Linking API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.7 apply.

A.3.9 NCL Connectors API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.9 apply.

A.3.10 NCL Presentation Control API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.10 apply.

A.3.11 NCL Timing API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.11 apply.

A.3.12 NCL Reuse API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.12 apply.

A.3.13 NCL Navigational Key API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.13 apply.

A.3.14 NCL Animation API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.14 apply.

A.3.15 NCL Transition Effects API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.15 apply.

A.3.16 NCL Metainformation API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.16 apply.

A.3.17 NCL Users API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.17 apply.

A.3.18 NCL Multimodal Interaction API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.18 apply.

A.3.19 NCL Sensory Effects API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.19 apply.

A.3.20 NCL Multi-device API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.20 apply.

A.3.21 NCL 360° VR API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.21 apply.

A.3.22 NCL Editing Commands API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.3.22 apply.

A.4 TV 3.0 Ginga-NCL presentation engine

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section A.4 apply.

A.5 Harmonization of TV 2.X/TV 3.0 support

A.5.1 NCL Preparation Event

In TV 3.0 Ginga-NCL, the handling of preparation events differs intentionally from the behavior implicitly allowed in previous TV 2.5 implementations based on ABNT NBR 15606-2. This change was introduced to remove ambiguities identified during the interpretation and implementation of preparation event semantics, particularly regarding the conditions under which a preparation can be considered successfully completed.

In earlier specifications (see ABNT NBR 15606-2 Section 7.2.8), the state transition associated with the end of a preparation event was the same (`stops` transition) regardless of whether the transition resulted from the natural completion of preparation or from an explicit termination triggered by the application (`stopPreparation` action role). Because both situations relied on the same transition, implementations could infer (or not) completion even when the preparation had been prematurely stopped, which in turn led to inconsistent interpretations of readiness for presentation and to fragmented middleware behavior.

For TV 3.0, this ambiguity was addressed by eliminating the possibility of explicitly terminating a preparation event through an application-driven `stopPreparation` action (see ABNT NBR 25608:2025 Section A.3.9). As a result, a preparation event now reaches its `prepared=true` state only as a consequence of its natural

conclusion under middleware control. This ensures that the completion of preparation consistently reflects the middleware's internal assessment of readiness rather than an external decision made by a Broadcaster Application.

This clarification directly strengthens the semantic reliability of preparation completion, particularly with respect to the expectation of immediate presentation start. When a preparation event concludes in TV 3.0 with its `prepared` attribute set to `true`, implementations can safely assume that the preparation has progressed to a level deemed sufficient by the middleware, without the risk that completion was forced while internal conditions were still incomplete.

Interruption of preparation remains possible, but only through abrupt termination semantics (`abortPreparation` action role), which are clearly distinct from successful completion and do not imply readiness for immediate presentation.

Although this change represents a departure from behaviors that may be tolerated by TV 2.5 implementations, it aligns the preparation model more closely with its original intent and with the TV 3.0 operational requirements. Future revisions of TV 2.5 specifications may incorporate similar clarifications in order to harmonize behavior across system generations.

Annex B

TV 3.0 Ginga-HTML5

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Annex B apply.

B.1 Introduction

This Annex details and explains recommendations and behavior of TV 3.0 HTML5, as supported by the TV 3.0 Application-oriented Platform defined in ABNT NBR 25608:2025. It provides operational guidelines for an implementation of TV 3.0 Ginga-HTML5 according to ABNT NBR 25608:2025, Annex B.

B.2 Basic reference

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section B.2 apply.

B.3 Application identification

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section B.3 apply.

B.4 Presentation of visual elements

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section B.4 apply.

B.5 User input

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section B.5 apply.

B.6 Network

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section B.6 apply.

Annex C

TV 3.0 WebServices

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Annex C apply.

C.1 Introduction

This Annex details and explains recommendations and behavior of TV 3.0 WebServices APIs supported by the TV 3.0 Application-oriented Platform defined in ABNT NBR 25608:2025. It provides operational guidelines for an implementation of TV 3.0 WebServices according to ABNT NBR 25608:2025, Annex C.

C.2 TV 3.0 WebServices architecture

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.2 apply.

C.3 General rules and definitions

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.3 apply.

C.4 Security rules and definitions

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.4 apply.

C.5 TV 3.0 WebServices APIs groups

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.5 apply.

C.6 TV 3.0 WebServices APIs specification

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.6 apply.

C.6.1 APIs for client identification and authorization

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.6.1 apply.

C.6.2 Event notification APIs

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.6.2 apply.

C.6.3 DTV context access APIs

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.6.3 apply.

C.6.4 APIs for communicating with TV 3.0 AoP

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.6.4 apply.

C.6.5 APIs for accessing broadcaster tables and metadata

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section C.6.5 apply.

C.6.6 APIs for accessing broadcast media content

C.6.6.1 API for obtaining available media players and API for obtaining information about a specific media player

This subsection establishes additional recommendations for APIs C.6.6.1 and C.6.6.2

C.6.6.1.1 closedSigning field

If the platform implements ABNT NBR 25606, the closedSigning field is expected to be set according to its implementation in the PMP. Support for this field in other media players depends on the platform implementation.

C.6.6.2 API for controlling a specific media player

This subsection establishes additional recommendations for API C.6.6.3.

C.6.6.2.1 playbackRate field

It is recommended that changes to the playbackRate field take into account the type of content currently being played by the media player. For example, if the content being played does not support changes to the playbackRate field, such as live content, the API may return error 101. The same applies if the player does not support reverse playback, in which case a negative playbackRate value is provided.

C.6.7 APIs for integration with the platform and home environment

C.6.7.1 API for registering filters for target applications

This subsection establishes additional recommendations for API C.6.7.3.

C.6.7.1.1 Removal of target applications

It's up to the AoP implementer to define the removal and timing of deregistering an application registered by a stand-alone local client, as well as error handling. The implementation may return error 101 if it can verify that the request to this API is not authentic, that is, if it verifies that the "canonicalName" and/or "targetId" sent are valid, but the target application is no longer available for execution.

C.6.7.1.2 Parameter repetitions

In general, target applications under registration may encounter parameters that are already registered by another application; therefore, the displayName should not generate an error in case of repetitions. It's up to the AoP implementer to validate if the registration parameters of an application are valid and associated with an application in the current service and may optionally return error 101 (Illegal argument value) for invalid values. To manage conflicts with stand-alone local clients, refer to ABNT NBR 25608 C.6.7.3.5.

C.6.8 Broadcaster security APIs

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.8 apply.

C.6.9 API for geolocation

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.9 apply.

C.6.10 APIs for closed signing

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.10 apply.

C.6.11 Application Context Cache APIs

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.11 apply.

C.6.12 Alternative MPD resolution APIs

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.12 apply.

C.6.13 Audience measurement APIs

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.13 apply.

C.6.14 TV 3.0 Users APIs

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.14 apply.

C.6.15 Remote device communication APIs

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.15 apply.

C.6.16 Sensory Effects APIs

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.16 apply.

C.6.17 Filter APIs for local caching of files transmitted via NRT from TV 3.0

For the purposes of this part of the Document, the terms and definitions of ABNT NBR 25608:2025, Section C.6.17 apply.

C.7 Harmonization of TV 2.X/TV 3.0 support

In a TV 2.X/TV 3.0 receiver platform (RP), support for all features implemented by application engines like NCL, HTML5 and WebServices should follow the definitions presented in the published ABNT standards for that version.

For TV 3.0 WebServices, the premises and recommendations described in Section 11 of this document apply. In a TV 2.X/TV 3.0 RP, the TV 2.X Ginga CC WebServices module supports all definitions and APIs described in ABNT 15606-11 and ABNT 15606-12, while the TV 3.0 WebServices module supports all definitions and APIs described in ABNT NBR 25608:2025, Annex C.

In certain specific situations additional guidelines are necessary for the implementation of TV 3.0 WebServices APIs.

In the case of some TV 3.0 APIs, when the service-context-id used in these routes is in the TV 2.X format, the API response should follow the same response defined in ABNT 15606-11. In these cases, the TV30- prefix should be omitted.

Additionally, for APIs which support the reading and writing of persistent values of an application, when the service-context-id used in these routes is in the TV 2.X format they should allow the reading and writing of such values for all the groups supported by TV 2.X, namely the shared, channel and service groups.

Hence, these recommendations apply in the following cases:

1) API C.6.4.1, defined in ABNT NBR 25608:2025, C.6.4.1. When service-context-id is in TV 2.X format, response should follow the definitions in API 8.3.1 of TV 2.X Ginga CC WebServices, defined in ABNT 15606-11, 8.3.1.

2) API C.6.4.2, defined in ABNT NBR 25608:2025, C.6.4.2. When service-context-id is in TV 2.X format, response should follow the definitions in API 8.3.2 of TV 2.X Ginga CC WebServices, defined in ABNT 15606-11, 8.3.2.

3) API C.6.4.5, defined in ABNT NBR 25608:2025, C.6.4.5. When service-context-id is in TV 2.X format, response should follow the definitions in API 8.3.5 of TV 2.X Ginga CC WebServices, defined in ABNT 15606-11, 8.3.5.

4) API C.6.4.6, defined in ABNT NBR 25608:2025, C.6.4.6. When service-context-id is in TV 2.X format, response should follow the definitions in API 8.3.6 of TV 2.X Ginga CC WebServices, defined in ABNT 15606-11, 8.3.6.

Annex D

NCLua for TV 3.0 Ginga-NCL

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Annex D apply.

D.1 Introduction

This Annex details and explains recommendations and behavior of NCLua for TV 3.0 Ginga-NCL, as supported by the TV 3.0 Application-oriented Platform defined in ABNT NBR 25608:2025. It provides operational guidelines for an implementation of NCLua for TV 3.0 Ginga-NCL according to ABNT NBR 25608:2025, Annex D.

D.2 NCLua Introduction

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.2 apply.

D.3 Lua library specification

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.3 apply.

D.4 Canvas API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.4 apply.

D.5 Event API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.5 apply.

D.6 Settings Data API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.6 apply.

D.7 Persistent Data API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.7 apply.

D.8 Directory API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.8 apply.

D.9 PBDS API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.9 apply.

D.10 Charset API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.10 apply.

D.11 ZIP API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.11 apply.

D.12 Bit32 API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.12 apply.

D.13 Buffer API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.13 apply.

D.14 Network API

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.14 apply.

D.15 Lua 5.1 specification

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.15 apply.

D.16 Application program interface (API)

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.16 apply.

D.17 Auxiliary library

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.17 apply.

D.18 Standard libraries

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.18 apply.

D.19 Complete syntax of Lua

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section D.19 apply.

Annex E

Regulatory Compliance Requirements for Brazil

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Annex E apply.

E.1 Specific Provisions on the Application Catalog

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section E.1 apply.

In TV 2.X/TV 3.0 receivers processing TV 2.X transmissions, when a BAMT is detected, as defined in ABNT NBR 15603-2:2026, the `BAM@mandatoryVisible` attribute should be obtained from this table.

When no BAMT is present in a TV 2.X transmission, the `BAM@mandatoryVisible` attribute should be set to `false`, corresponding to the default value defined in ABNT NBR 25608:2025 Table E.1.

E.2 Common Platform for Public Communication and Digital Government on TV 3.0

For the purposes of this part of the Document, the requirements and definitions of ABNT NBR 25608:2025, Section E.2 apply.

E.3 Additional recommendations

Requirement ACFR-20 of ABNT NBR 25608 establishes that the receiver shall perform dynamic updates of Bootstrap Applications periodically when the receiver is in standby mode, at a frequency to be defined by local implementation policies and guidelines.

For Brazil, it is recommended that the Bootstrap Applications from a newly launched TV 3.0 service be added to the Application Catalog at most one day after the service's launch. For this, the receiver can use periods when it is in standby mode to perform an automatic signal scan, considering the elapsed time of 24 hours since the last automatic scan performed under the same condition or since the manual scan initiated by the viewer via the Application Catalog.

If the receiver remains continuously turned on for more than 24 hours, it is not necessary for it to perform an automatic signal scan during this period to update the Bootstrap Applications in the Application Catalog. However, at the manufacturer's discretion and in order not to compromise the update process, the receiver may perform this scan if there is not a Bootstrap Application or Broadcaster Application consuming content from the tuner or if a second tuner is available for the operation.

In standby mode, the scan may be interrupted before completion if the receiver is turned on again. In this case, only the Bootstrap Applications identified up to the point of interruption should be added to the catalog; existing entries are retained in accordance with ACFR-21.

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Version history

2nd edition, April 2026. Adds guidelines on the following aspects:

- 7.6 Persistent Media Player
- 8.8.7 Delivery of privacy notice via broadcast
- 8.8.8 Privacy-related XML schema files
- 10.6 Remote-control functions
- A.3.6 NCL Interfaces API
- C.6.6 APIs for accessing broadcast media content
- C.6.7 APIs for integration with the platform and home environment
- E.3 Additional recommendations

1st edition, January 2026. Initial text, includes guidelines on the following aspects:

- 8.4 Bootstrap Applications
- 8.8 Privacy Manager
- 11 Harmonization of TV 2.X/TV 3.0 support
- 11.1 Application Execution Environment
- 11.2 Electronic Programming Guide (EPG)
- A.5 Harmonization of TV 2.X/TV 3.0 support
- A.5.1 NCL Preparation Event
- C.7 Harmonization of TV 2.X/TV 3.0 support
- E.1 Specific Provisions on the Application Catalog