



Agência Nacional de Telecomunicações
Comissões Brasileiras de Comunicações (CBCs)

Convergence and Harmonization with GINGA for a new Television Experience

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**Workshop on Harmonization of Web and IPTV
technologies**

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ANATEL – Brazilian National Telecommunications Regulatory Agency



Background

- Who is ANATEL?
 - ANATEL is the **Government Agency** responsible for organizing the telecommunications market, including video distribution;
- Main responsibilities:
 - **Plan and regulate the services and service providers**, for example in the following areas: fixed line telephony, mobile telephony, data, Pay TV, satellite capacity;
 - Plan the use of the **spectrum** and authorize its usage;
 - **Supervise and control** the service providers (obligations with quality of service and customer relationship);
 - **Represent Brazil's Government in International Telecommunications Forum.**



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EVOLUTION OF PAY TV SERVICES

- Business and Service Models are changing:
 - Shift in subscriber needs;
 - Increasing competition on the supply of audiovisual content distribution services;
 - IPTV as the new way to deliver a new television experience.

EVOLUTION OF PAY TV SERVICES

Shift in the Subscriber Needs



- Shift in the subscriber needs:
 - Impact of the Internet on the Subscriber;
 - Connected users oriented by social relationships;
 - These users require, from the services they use, more openness, interaction, participation and relationships.
 - Coexistence of categories of users, for example:
 - *Lean back*: traditional subscribers of Linear TV and recording resources;
 - *Lean forward*: subscribers used to the internet, that demand more interactivity and control over the content;
 - New tools/experience: content sharing, *time-shifting* and *space-shifting*.

- Shift in the subscriber needs (cont.):
 - Need for new forms of content packaging;
 - Multiple Devices (TV, PC, Mobile Devices, etc);
 - » Convergence of devices;
 - » Interoperability between devices;
 - Subscriber Mobility and Content Portability;
 - Content on Demand;
 - Personalization;
 - Interactivity.

EVOLUTION OF PAY TV SERVICES

Increasing competition on Distribution



- Increasing competition on the supply of Pay TV Services;
 - Everybody wants a piece of the market!
 - Wide competition for the user entertainment preferences;
 - Users are increasingly unlinking TV content from traditional Pay TV Service Providers and Broadcasters (“Over-the-top”, for example);
 - “*Over-the-top*” services pressuring the current content supply model (exhibition windows);
 - Competition between traditional forms of content distribution and new forms (user generated content, “over-the-top, etc).

EVOLUTION OF PAY TV SERVICES

IPTV as the new way to deliver new experience



- IPTV as the new way to deliver a new television experience;
 - Set of technologies that allow audiovisual content distribution by means of managed networks with quality, security and reliability;
 - Video on Demand (service differentiation);
 - Allows for new features:
 - Personalization;
 - Rich interactive experience;
 - Diversity of content sources;
 - Service offer in multiple devices, etc.

EVOLUTION OF PAY TV SERVICES

New Business and Service Models



- Need for new business models, flexible enough to allow the service provider to adapt to a changing environment;
- International Standardization Bodies are defining this new model for Pay TV Services;
 - Standardization of the architecture and related components of a new service model.



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GINGA
Harmonization Among Different
Environments

- What is Ginga?
 - Ginga is a solution for interactive multimedia applications, developed in Brazil;
 - "Ginga" is adopted as the middleware for Digital Television in Brazil and other countries.
 - Ginga includes two subsystems, Ginga-NCL and Ginga-J, which allows for the development of applications using different development paradigms (declarative and imperative).

Standardization of GINGA



- Recommendation of Ginga technologies for different environments, such as IPTV, broadcasting and Cable TV;
- Highlights:
 - H.761 - NESTED CONTEXT LANGUAGE (NCL) AND GINGA-NCL FOR IPTV SERVICES;
 - Inclusion of NCL (Nested Context Language) as a language for harmonizing declarative content in broadcasting and Cable environments:
 - Rec. UIT-R BT.1699 - Harmonization of declarative application formats for interactive TV.
 - Rec. UIT-T J.201 - Harmonization of declarative content formats for interactive television applications.

- Current Activities:
 - Development of H.IPTV-MAFR.14 – LUA for IPTV Services;
 - Development of H.IPTV-Widgets, which include description of Widgets based on NCL and LUA;
 - H.761 Conformance Testing.

GINGA – Future Vision



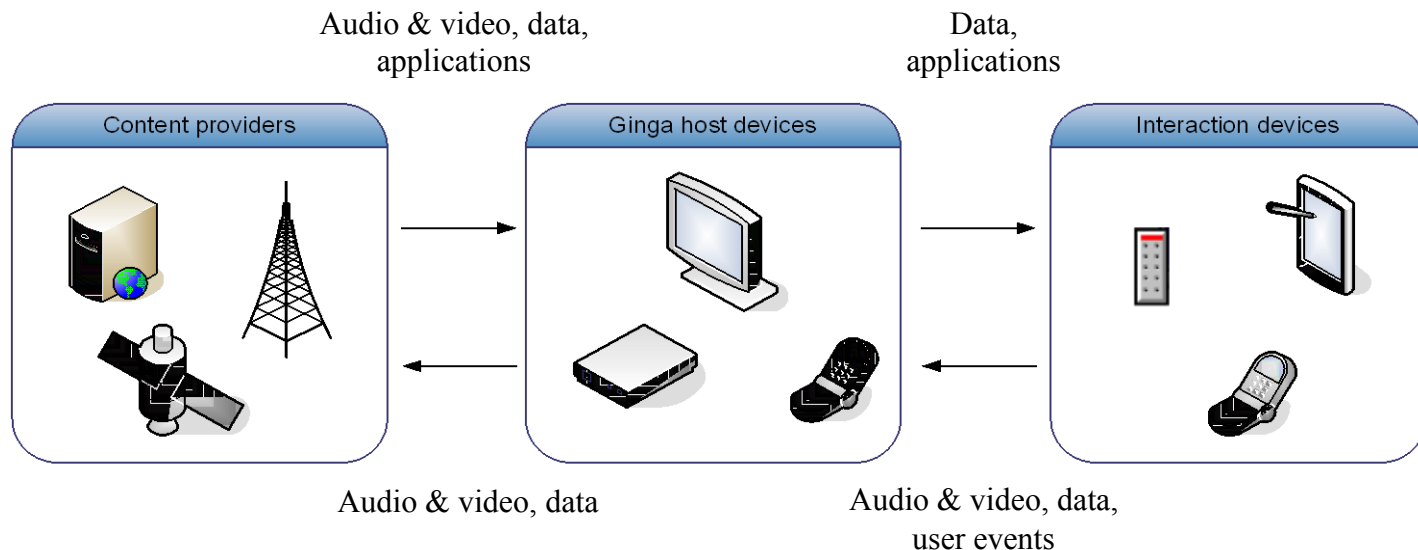
- Actions taken up to now:
 - **Standardization of Ginga:**
 - Locally and internationally;
 - Different environments.
 - **Adoption** as the Digital TV middleware in Brazil and other countries.
- Next steps:
 - Provide incentives for implementation of GINGA in other environments, such as Cable TV and IPTV;
 - **Regulatory actions** might be necessary;
 - **Conformance and interoperability** discussion is key;
 - Harmonization in all different audiovisual content distribution environments can bring **economies of scale** (bigger market for content).



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Harmonization with GINGA

- Examples of how to use Ginga to create harmonized solutions that can deal with content from different environments and different interaction devices.
 - ITU-T HSTP.IPTV-HRM.2 – Harmonization of MAFR series with multiple content sources;
 - ITU-T H.761 already provide support for interaction with multiple devices.





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Thank You!

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