



TQTVD / TOTVS – Company Overview
JCP Positioning Statement
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What is TQTVD?

TQTVD is a wholly owned subsidiary of TOTVS group 100% devoted to the Digital TV marketplace and the offering of DTV products and services in Brazil and Latin America.

Its flagship product is **ByYouTV**, the Ginga middleware standard implementation, that currently has a great potential in all countries who adopted the ISDB-T DTV System (10 countries in Latin America + 2 in Asia).

What is TOTVS?

TOTVS is a software giant in Latin America, currently #7 in the world for the ERP market and #1 in Latin America. With 9.000 employees, R\$ 1B annual revenue and presence in all Latin America and in Europe, TOTVS is a fast growing company that has the Java platform as one of its key technologies.

- ❑ TOTVS has two business units for DTV: Products and Professional applications
 - ❑ **Products** – Responsible for developing ByYouTV and porting it to customer target platforms. It is also responsible for developing several other products related to DTV market.
 - ❑ **Professional services** – Responsible for implementing interactive applications for broadcasters and other value chain players.

- ❑ TOTVS is a key member of the Brazilian DTV Forum (SBTVD), currently representing the Software Sector in the SBTVD Executive Council, leading several technical groups and strongly engaging in producing all necessary information to foster the adoption of interactivity in all possible DTV scenarios.

- ❑ TOTVS has come to a recognized leadership position in embedded software market and has partnered with Oracle to become the lead supplier of DTV software and middleware solutions for integrated DTV, STB and mobile manufacturers in Brazil and Latin America.

Brazil's Adoption of ISDB-T

- ❑ Brazil adopted the Japanese ISDB-TB standard over European DVB and US ATSC.
- ❑ Mobile DTV is built into the base level standard.
- ❑ New comprehensive middleware framework, combining declarative (NCL/LUA) and procedural (Java) application development environment.

SBTVD Standard Development Status

- ❑ Ginga Specification (NCL and **JAVA**) approved and already published.
- ❑ Test Suite standard under development. Proposed to be TCK based.
- ❑ Security standard for DTV under development, based on **Java DTV**, JSSE and other Java APIs.

Países da América do Sul e Central que já adotaram o padrão ISDB-Tb



ISDB-T Population:
354 Million in LATAM (2)

10 countries in LATAM
+ Philippines and
Japan in Asia (1)

(1) <http://www.dtv.org.br>

(2) <http://pt.wikipedia.org/wiki/ISDB-TB>

Ginga Standard

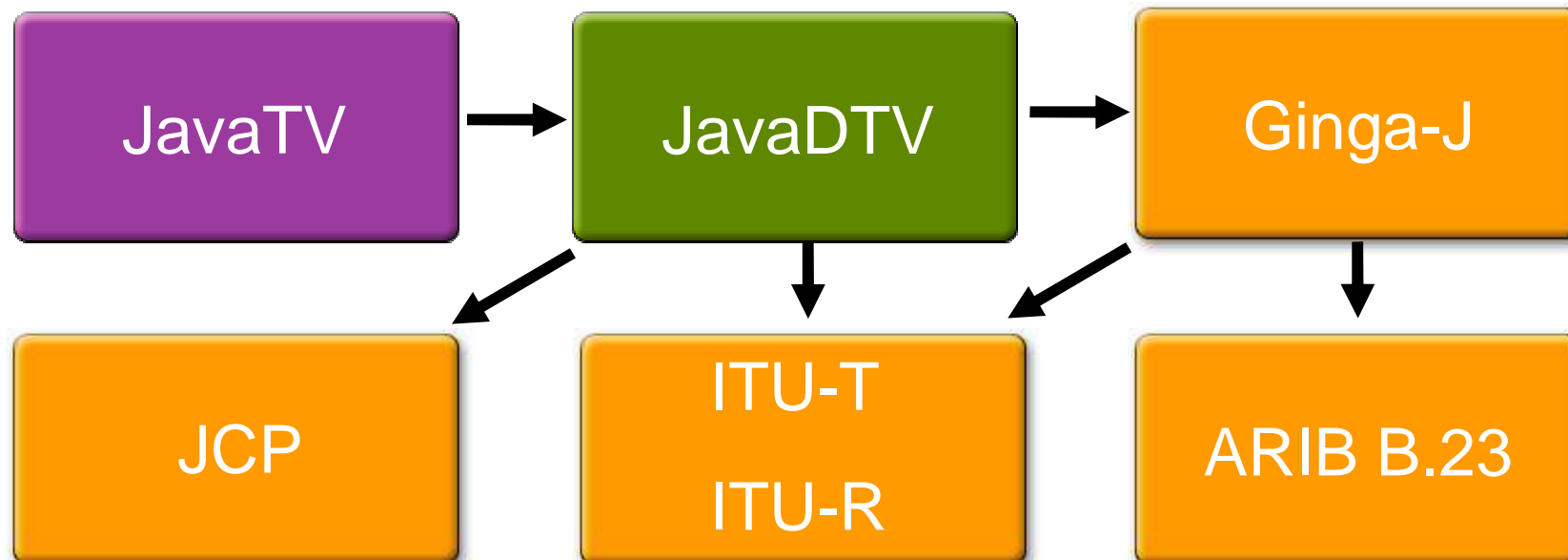
The official Ginga Standard is ABNT NBR 15.606 called by SBTVD as Standard #6. This standard has 6 volumes:

- 15.606-1 (N06 Vol. 1) – Data Codification
- 15.606-2 (N06 Vol. 2) – Ginga-NCL
- 15.606-3 (N06 Vol. 3) – Data Transmission
- 15.606-4 (N06 Vol. 4) – **Ginga-Java**
- 15.606-5 (N06 Vol. 5) – Ginga for Mobile (1-Seg) receivers
- 15.606-6 (N06 Vol. 6) – **Java DTV**



Future

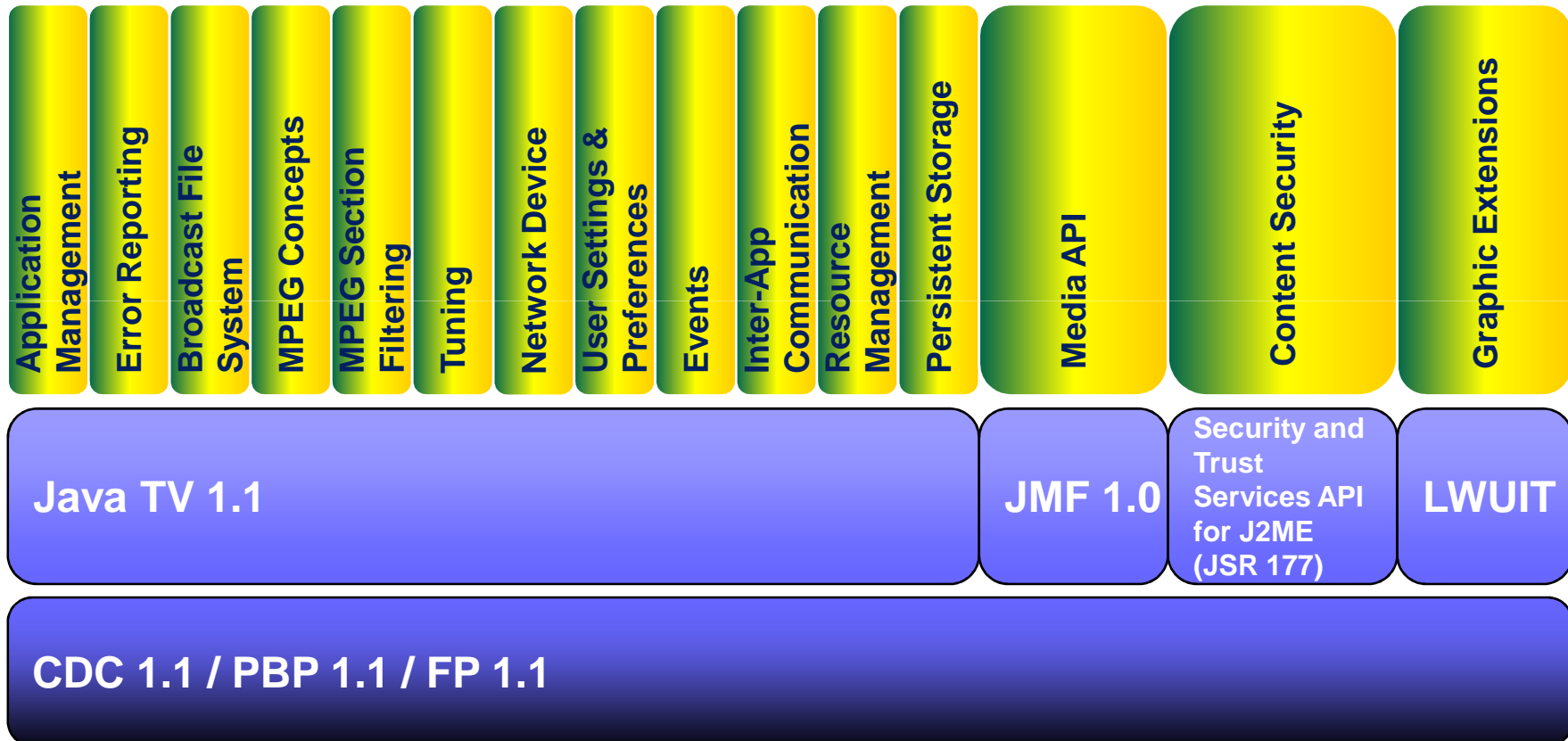
- Adoption of Ginga-J and Java DTV in other countries.
- Java DTV / Ginga-J as an international standard.
- Big repercussion in the Java Community.
- Exporting of content and tools.



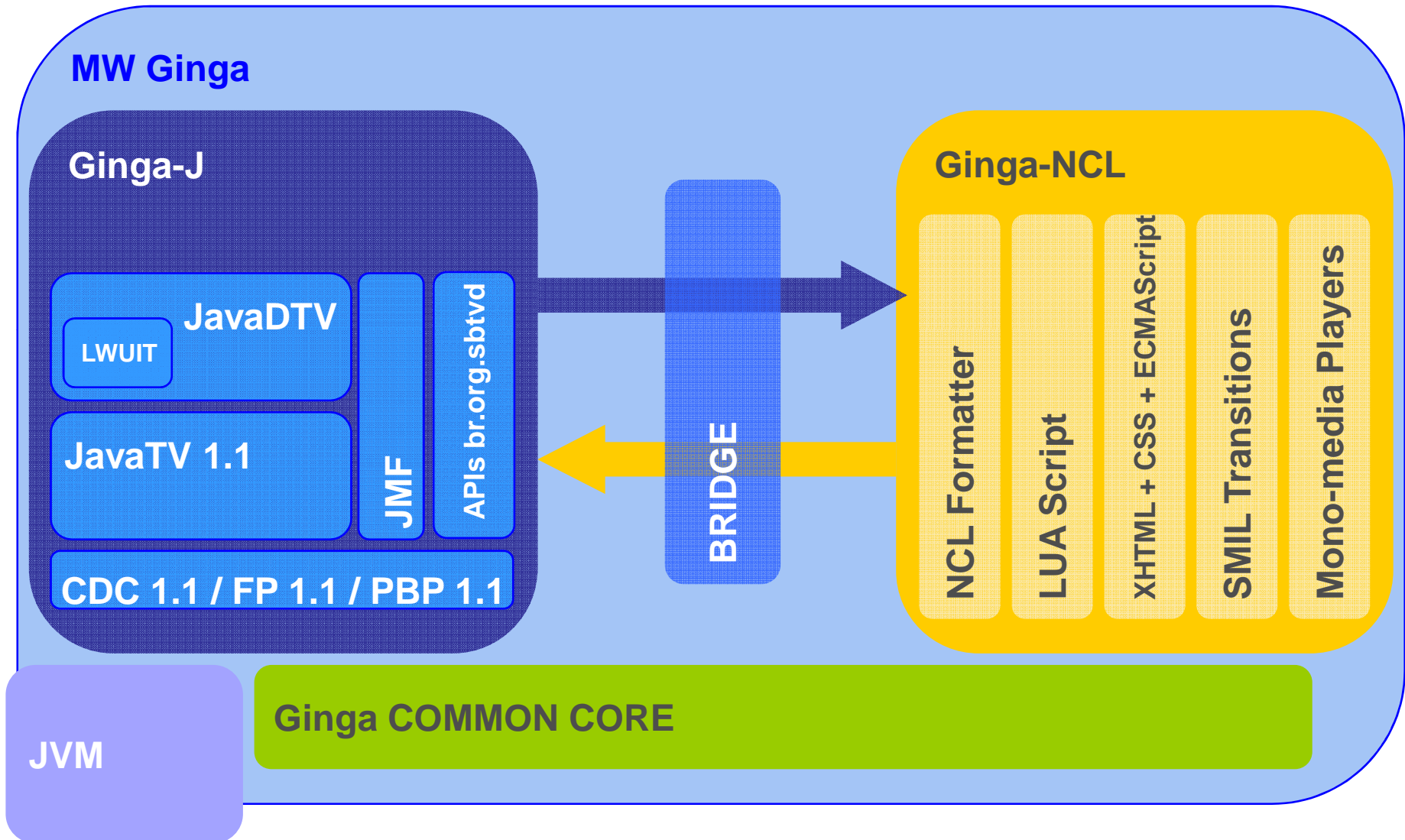
- Component based interfaces
- Access to platform resources
- Applications catalog
- Simple and effective media control
- Secure data transactions
- Animations and rich graphical transitions (LWUIT)
- Application internationalization capability
- Smartcard support
- Easy content adaptation to other technologies
- Simultaneous interaction with multiple users *
- Receiver integration with other devices *

* Optional features

Simple, flexible and powerful architecture, seamlessly integrated, built bottom-up upon proven Java standards



Final Ginga Standard after JavaDTV Specification inclusion.



Brazil-Japan GTC (JWG)

- ❑ In the scope of the JWG (Joint Work Group) Brazil-Japan, in Subgroup A, the Technical Standards from both systems, including the Middleware standards are being harmonized.
- ❑ Goal: achieving a set of integrated standards and describing each standard's specializations.
- ❑ This task is led by representatives from the SBTVD Forum Technical Module and by the Japanese ARIB organization.
- ❑ TOTVS takes active part in this Group.

G T C
BRAZIL-JAPAN

**FÓRUM
SBTVD**



ITU

- ❑ At ITU (International Telecommunication Union) – the Ginga standard has already gained widespread recognition.
- ❑ NCL language was chosen as an IPTV standard and is now ITU-T Recommendation H.761.
- ❑ Ginga as a whole was subject of extensive studies inside ITU-T (SG9) and ITU-R (WP 6B) to become part of the revised Recommendations J.200, J.201, J.202 (ITU-T) and BT.1699 e BT.1722 (ITU-R), that deal with the standardization of DTV interactive middleware APIs. Ginga's inclusion into these newly revised Recommendations was recently approved by ITU.
- ❑ TOTVS was on the forefront of all these initiatives inside ITU, being part of the Brazilian national delegation.



TOTVS in the DTV Market

- ❑ TOTVS has active partnerships with Oracle, ST Microelectronics, Intel and Broadcom and is working in the deployment of its flagship middleware product (ByYouTV) in embedded STBs, integrated DTV sets, mobile phones, smartphones and other devices.
- ❑ TOTVS is currently working with Java DTV and Java TV deployments with names like LG, LG Mobile and Sony among other big brand manufacturers. LG was the first to deploy an ITV set in the market.
- ❑ TOTVS has been deeply involved in the DTV scenario, taking the seat representing the Software Sector in the Brazilian SBTVD Forum Executive Council, in fact leading the standardization process that has recently published a Java-based standard (Ginga-J) for the Japanese-Brazilian Digital TV system (ISDB-T), now chosen by 5 countries in Latin America besides Brazil.

TOTVS in the DTV Market

- ❑ Broadcasters (like TV Globo) and DTV manufacturers in the Brazilian market have come to respect and expect TOTVS's leadership in the software scenario.
- ❑ Sun/Oracle and IBM were examples of companies invited to participate in the Brazilian Forum because of partnerships and sponsored by TOTVS.
- ❑ TOTVS currently is heavily participating in the Brazilian Government's efforts in spreading the ISDB-T system to all countries in Latin America and also in Africa, including the fundamental role of Java (with Java TV and Java DTV as core technologies).
- ❑ Mobile TV is starting to gain momentum in Brazil and is expected to have big numbers (comparable to those in Japanese 1-Seg market), with several devices available and several manufacturers competing for the market. TOTVS is already the first company to deploy in the mobile ITV market.

Java in the DTV Market

- ❑ TOTVS currently has a unique position in the SBTVD Forum and had a fundamental participation in the SBTVD Executive Council's decision of keeping **Java as an integral part of the unified Brazilian-Japanese ISDB-T Interactive TV standard.**
- ❑ TOTVS proposes that the DTV Test Standard in Brazil should be based on **JCP JSRs and TCKs.**
- ❑ The upcoming **DTV Security Standard in Brazil will be based on Java** technologies and has received heavy interest from the Banking industry.
- ❑ TOTVS currently is heavily participating in the Brazilian Government's efforts in promoting and spreading the ISDB-T system to all countries in Latin America and also in Africa and Asia, including the **fundamental role of Java** (with Java TV and Java DTV).

Java Digital TV Application Store: Sticker Center

- TOTVS is now offering Sticker Center, an advanced solution that harmonizes different scenarios:
 - Broadcaster's control over broadcaster's TV applications.
 - Includes an **open application store** concept / model for application downloading through connected TV broadband.
 - Opens business model for pre-loaded apps where TV manufacturer gets a revenue sharing with big advertisers / sponsors (retailers, banks, etc.).
 - Prepared for on-demand video content distribution via broadband access to content providers or broadcasters portals.
 - Based on an up-to-date, best of breed, open standard already embraced by global standard organizations such as ITU.



DTV Market: Opportunity

- The adoption of **Digital Interactive** FTA TV is creating a new market in Brazil with international reflections. This market **offers a great growth potential to the software industry in general.**
- The creation of interactive content with the Ginga middleware needs a set of special tools and test environment. The **main Brazilian broadcasters** and the software industry **led by TOTVS** are fomenting this market and attracting the **Java Community to work on this opportunity.**
- Today in Brazil (and in the future in the new ISDB countries), the right conditions and synergy are in place to make Interactive Digital TV a success through Open Standards and Standard Bodies like **JCP** and the ITU.
- TOTVS wants to align this market with the international Java Community and converge DTV, mobile and Internet on these new and innovative Interactive TV and Connected TV scenarios. **With the availability of an App Store model**, the DTV market in ISDB countries will have great appeal to the Java Community.

- ❑ **Official ABNT / SBTVD Standards**
 - ❑ <http://www.forumsbtvd.org.br/materias.asp?id=112>

- ❑ **Java DTV**
 - ❑ <http://www.forumsbtvd.org.br/materias.asp?id=200>
 - ❑ <http://java.sun.com/javame/technology/javatv/>

- ❑ **How Brazil is changing DTV**
 - ❑ <http://www.robglidden.com/2009/09/the-bric-that-could-how-brazil-is-changing-tv/>

- ❑ **TQTVD**
 - ❑ <http://www.tqtvvd.com>

- ❑ **TOTVS**
 - ❑ <http://www.totvs.com>

Thank you!

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