

ITU-T Workshop

"The impact of the United Nations Convention on the Rights of Persons with Disabilities on the work of the ITU-T"

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Advanced Multimedia System (AMS)

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What is AMS?

- The Advanced Multimedia Systems (AMS), also known as H.325, is the third-generation multimedia system developed by the ITU
 - First generation was H.320 (ISDN)
 - Second generation was H.323 (IP)

Are We Re-Inventing the Wheel?



- We are not re-inventing the wheel, but we do aim to **improve upon it.**
- Advances in technology require us to think about what we have today to see whether it **makes sense** for the future.
- **Technology is always changing.**
- We decided that today's systems are simply not designed for the more **advanced capabilities** that we want to enable.

Key Issues with Existing Systems

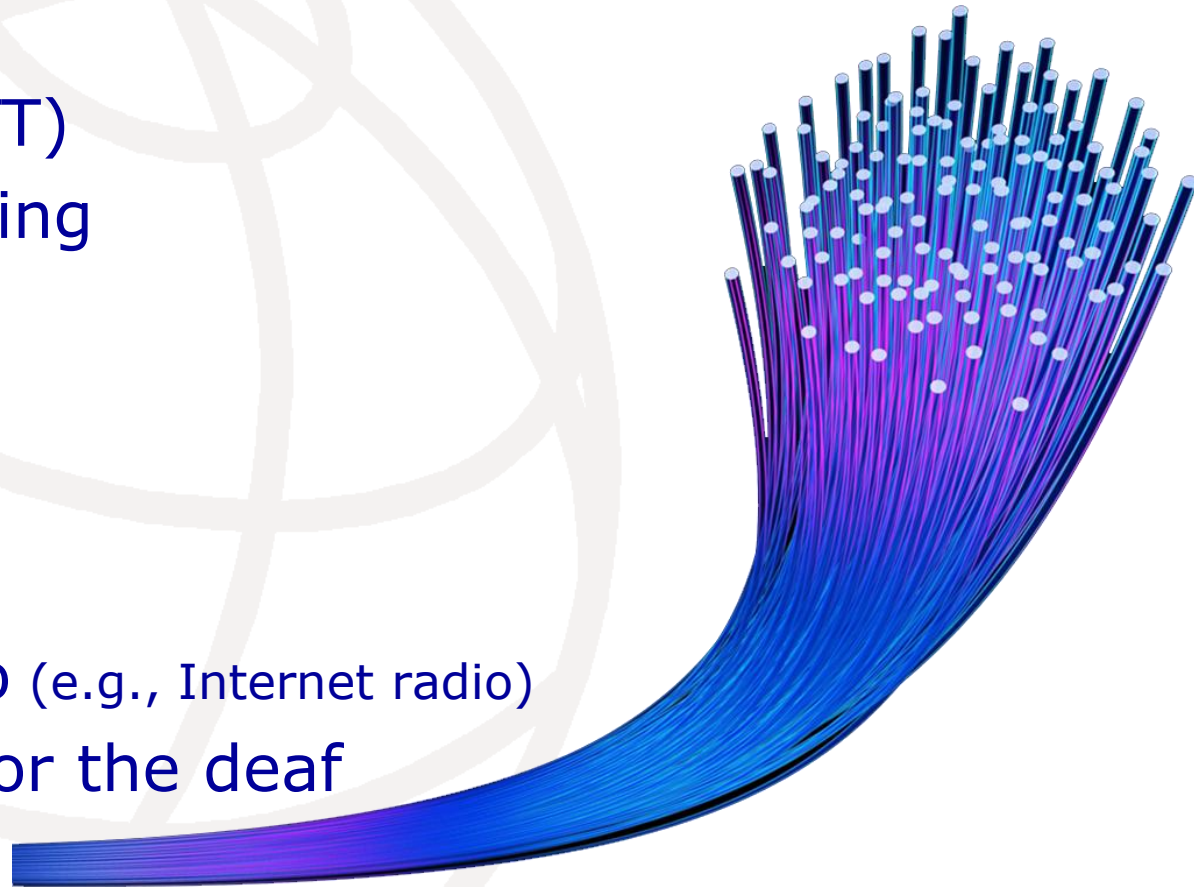
- Hard to introduce new functionality
- No standard way to introduce new applications
- Accessibility issues were not considered from the outset
- Most importantly, existing multimedia systems were solely focused on voice and video communication; we wish to broaden the scope of what H.325 encompasses

Re-Thinking Multimedia Communication

- We want to create a **platform** that would enable all kinds of new **applications**
- We want to enable users to use any number of **different devices**
- It's **not** necessarily a "phone"
- We want to enable **mobility**
- We will consider **accessibility** issues

We Want Applications!

- Voice
- Video
- Text (IM and RTT)
- Application sharing
- Whiteboarding
- File transfer
- Video streaming
- Video games
- Streaming audio (e.g., Internet radio)
- Flashing lights for the deaf



AMS Will..



- Be a new and different multimedia system
- Not be just a Voice over IP system
- Enable a union of physically separate devices, like a desk phone, mobile phone, or LCD panel on the wall
- Enable multiple applications to work together in order to deliver a rich communication experience



Imagine...

Mobile Content

- Being able to view this presentation remotely via your mobile device while the presentation is being given and without having to download the content in advance



Mobile Content On any Device

- Viewing that presentation while riding in the back of a taxi



Enabling Interactive Media

- Imagine playing interactive video games (or using other applications) as easily as making a phone call
 - Using the same communication platform
 - Interconnecting devices
 - Sharing network resources



Improved Productivity

- Imagine initiating in instant messaging session with a colleague
 - Click a single button on the computer to enable web conferencing
 - Turn on a video screen to interact using sign language
 - Turn on an intelligent whiteboard device and jointly collaborate
- And imagine doing all of this without initiating multiple different sessions, entering digits, or “joining a conference” – all of this will be automated with H.325

Freedom to Roam

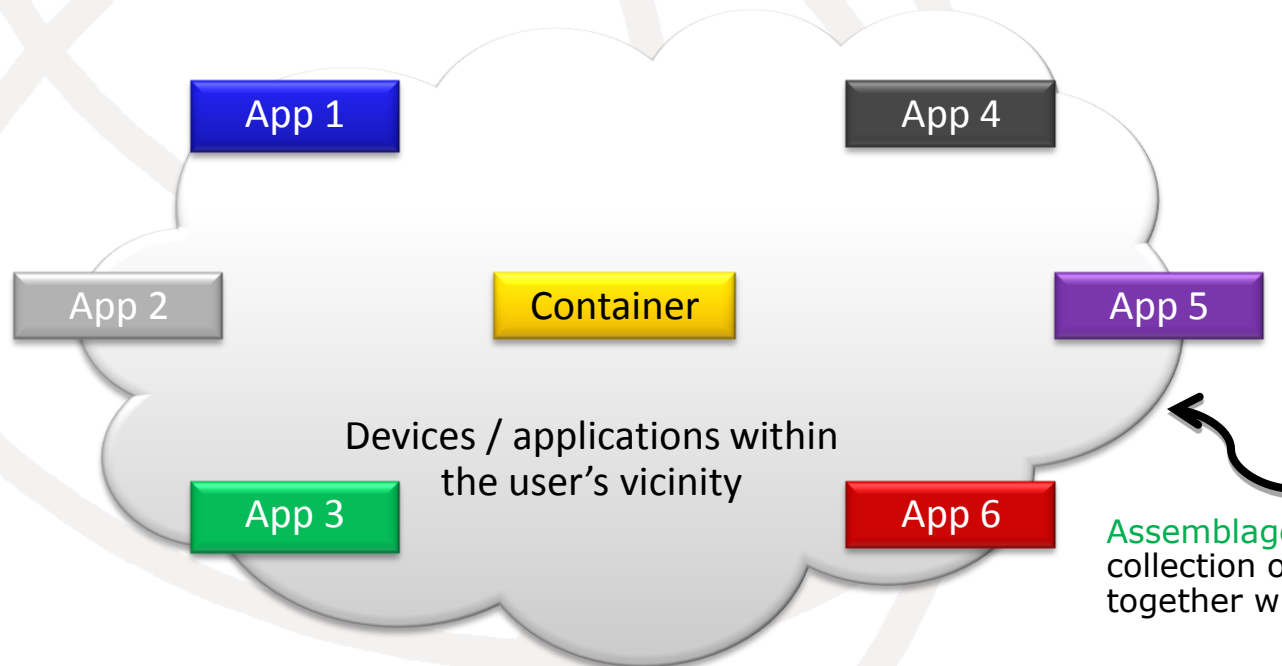
- Imagine moving from a **mobile call** into a **telepresence** conference by simply placing the mobile device on the table
- Imagine taking a **video call** at any nearby video display device
- Imagine **sharing your presentation** via an in-room projector from your mobile phone, with content sourced from the office

A New Architecture

- The user's device ("container") is **logically separate from the applications**, allowing the user to use any number of applications on any number of different physical devices
- Any application developer can create **new applications**
 - No more waiting for vendor enhancements
 - More vendor choices
 - More application choices

Concept of the Personal Network

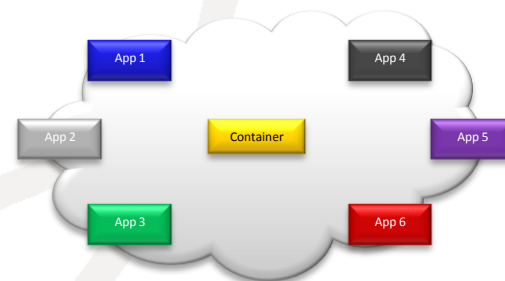
- ▶ Home
- ▶ Automobile
- ▶ Work



Assemblage: the collection of applications together with a container.

Personal Network in Brief

- The **Personal Network** is comprised of the **applications and devices** that are **within proximity** of the user at a given time: at home, in the car, at the office, or wherever
- The devices within the Personal Network might allow one to present material via a projector, listen to or view locally generated content, exchange files, etc.
- **Any application or device** within the Personal Network **may communicate with other applications or devices** in the Personal Network



Network Robot / Connected Home

- H.325 enables **devices** and application in our **homes or offices** to interact
- This is **not traditional** multimedia communications
- Made possible by **decoupling the “control” device from the “applications”**
- Many more devices become **“intelligent”**

Accessibility Considerations

- Accessibility needs were not considered in the development of H.323 and SIP
- AMS will allow a device to register and receive a notification of an “alerting” event
 - This device could be a lamp that flashes
- The same mechanics can drive all kinds of inter-application communication
- Given the architecture and applications possible, an assortment of new kinds of automated and human translation services should be possible
 - An application could provide real-time speech-to-text
 - Applications could invoke services of human translators

A Simple Vision

- The **network** and the **devices** therein should serve to enhance our lives and **better enable people to communicate**
- The system will be an **extensible application platform**
- The system should **enable new modes of communication** as people create them, without the need to upgrade Container or network infrastructure for every new application
- Implementing and deploying new modes of communication **should be simple** – the platform deals with the mundane/complex parts
- One should be able to utilize a **multiplicity of devices**
- It is time for **multimedia systems to advance**

The logo features the letters 'AMMS' in a bold, sans-serif font. The 'A' is light gray and 3D. The 'MMS' are white and 3D, set against a blue rounded rectangular background. The entire logo is on a silver base with a blue top half. A faint globe is in the background.

AMMS

Technical Details

- The following slides provide some additional technical information
- It will not be presented during the meeting, though you are welcome to contact the author for more information
 - paulej@packetizer.com (email and Jabber/XMPP)

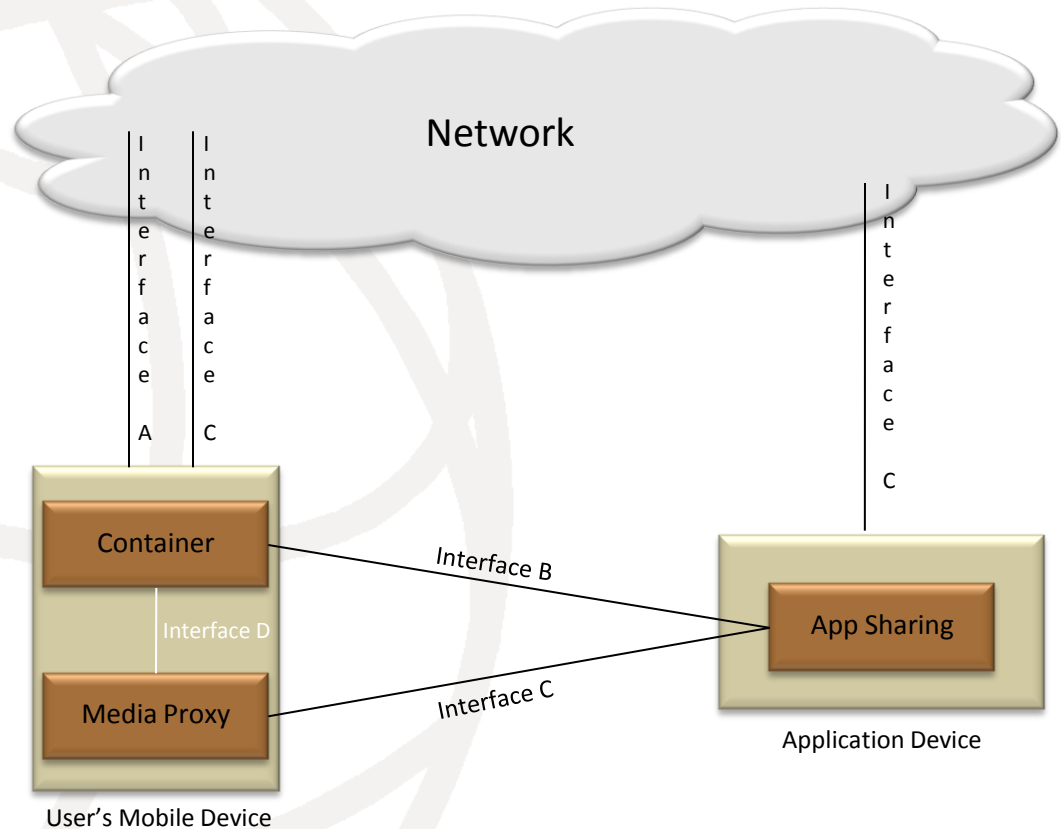
More on the Container

- The “Container” represents the **user’s identity** to the H.325 network
- **Container** functionality *may be* integrated into network elements (e.g., traditional IP PBX), but would most likely be in a **mobile device** carried by the user (e.g., a mobile internet communicator)
- A **Container does not have application intelligence**
 - Serves as a timing source for synchronization
 - Coordinates communication within the assemblage and across the network
 - Does not know or care what applications are doing
 - May serve as a proxy for media

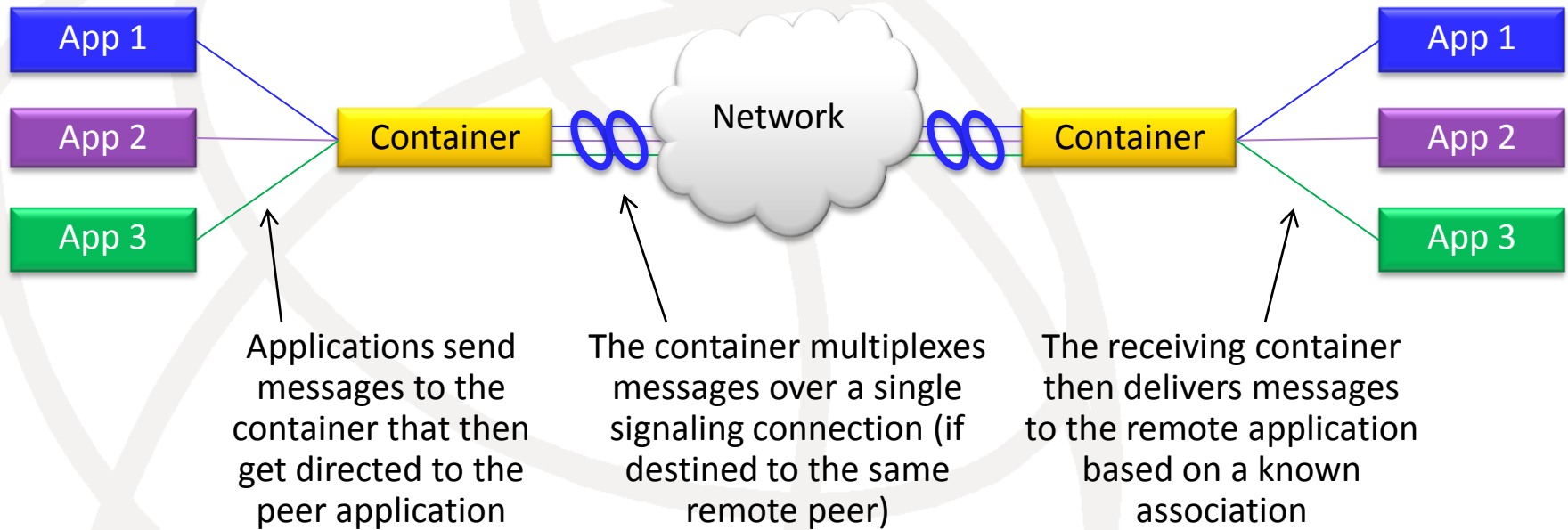
H.325 Terminal Interfaces

- ❖ Interface A – Container / Network signaling
- ❖ Interface B – Container / Application signaling
- ❖ Interface C – Media flows
- ❖ Interface D – Media proxy interface

Note: While the picture shows the “App Sharing” application with two Interface C’s, an application would only send media directly to the network or via the media proxy as dictated by the Container.



Signaling Between Remote Applications



Note: Media does not usually flow through the container. Rather, it flows end-to-end between communicating applications. However, the container may provide a media proxy function to enable end-to-end media flows when no other path exists.

The Applications

- Anything you can imagine
- Implement a consistent and predictable interface
- May be running on the same or different physical devices
- Applications may interact with multiple containers
- Fully distributed, yet centrally controlled (from the user's perspective)

More on Applications

- Applications like voice, video, video games, file transfer, and whiteboard are enabled via separate applications that may be co-resident with the container or exist on physically separate devices
- New applications may be introduced without changes to the container or network elements
- Applications may be upgraded independently of other applications
- Applications can communicate with other applications within the assemblage (locally) or with applications across the network

Application Handover

- Moving from voice on a mobile to Telepresence
 - Imagine walking down the hall talking on a mobile phone
 - Walk into a Telepresence conference room
 - Place the mobile phone on the desk
 - The call then transitions automatically from voice to Telepresence with HD video, audio, and presentation
- Content To Go, and Taken on the Go
 - Imagine walking up to a kiosk where a video is playing
 - Press a button on your mobile device and the video moves from the kiosk to the Container (not a copy, per se, but the mobile device is now streaming content from the network or has it "paused")
 - Walk into your living room and press a button to transition that content from the mobile device to your HD TV

Network Facilities

- Application functionality may also be realized with **local elements** that are within the user's proximity and with **functionality from the cloud**
 - Suppose one has a traditional TV with a set-top box. One could then have a video "receiver" in the cloud. Browsing video content available from any number of sources, that content could be sent to the cloud-based video receiver and then delivered to the traditional TV
- Network facilities might facilitate **transcoding**
- Network facilities would enable multi-user **conferencing**

Personal Network and Mobility

- When a **user moves** from place to place, the **physical components** of the Personal Network might **change**
 - The projector or display at the office is great
 - The projector or display at a customer site is not so great
- Though physical components might change, the **interaction and experience should be consistent**; there should only be an enhanced or degraded performance based on the quality of the components
- Different applications used for any kind of communication, whether it is within a Personal Network or a Internet network, is referred to as an **“Application Set”**

Other Important Concepts

- **Event notification framework** that will allow applications (local or remote) to be notified of certain events
 - When a “call” arrives, a “lamp application” may be notified so that it may flash to alert the deaf user of an incoming “call”
 - Network-based applications will be made aware of when you arrive home from the office and could turn on soft background music
- **Application control interface** for any application is “remotable” to any other suitable display
 - This is envisaged as being implemented via XHTML
 - One should be able to control the TV from the container or control a video projection system from a PC, as examples

The Protocol

- It will be **different** than the previous generation
 - An interface between applications and the container
 - An interface between the container and the network
 - ITU will define a core set of applications following a similar design approach, but since the system imposes few constraints, application developers have a lot of flexibility in how they design applications
- Protocol will be **defined using XML**
 - Programmers already know how to work with XML
 - H.325 will likely use Efficient XML Interchange (EXI) for XML compression (from the W3C)*

* Still under discussion