Get Connected and Distributed

Internet Enabled Systems
New dimensions of scalability

Christo Radev and Mladen Nochev, November 2008, Plovdiv
Contemporary system main features

- Internet enablement
- Scalability and reliability
- Connectivity and availability
- Maintainability and flexibility
- Collaboration based on openness
- Manufacturer neutrality and compatibility
- Platform independency and portability
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Spots of the Openness
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Internet of Things

Figure 1 – A new dimension

Any TIME connection
- On the move
- Outdoors and indoors
  - Night
  - Daytime

Any PLACE connection
- On the move
- Outdoors
- Indoors (away from the PC)
- At the PC

Any THING connection
- Between PCs
- Human to Human (H2H), not using a PC
- Human to Thing (H2T), using generic equipment
- Thing to Thing (T2T)

Spatially Temporal Scalability
New Dimension of Scalability

Source: ITU adapted from Nomura Research Institute
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Things with Lifestyle

Figure 1 – A new dimension

Any TIME connection
- On the move
  - Outdoors and indoors
    - Night
    - Daytime
- At the PC
- On the move
- Outdoors
- Indoors (away from the PC)

Any PLACE connection
- Between PCs
- Human to Human (H2H), not using a PC
- Human to Thing (H2T), using generic equipment
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Any THING connection

Spatially Temporal Changeability
Changeability in Depth

Source: ITU adapted from Nomura Research Institute
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“Technology jam” or “a gem of a child”
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Proof of concept usecase
- Security domain targeted,
- Audio, video and event based,
- Internet enabled, Distributed,
- Simple and flexible at installation,
- Automated and remotely maintainable
- AV Surveillance for Security Systems with
- 3 Dimensional changeability and
- 100% Open Source and Standards basis
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Tested, Currently Used, Planned for Usage

- **OS** – Linux, MacOS, Windows etc.
- **Java** – OpenJDK, JamVM, Sun JDK etc.
- **OSGi** – Equinox, RCP, RAP, ECF etc.
- **Projects** – R-OSGi, BarkDS, eConference,
- **VideoLAN’s VLC Media Player**, J VLC etc.
- **Fluent interface, Dependency Injection,**
- **Inversion of Control, Aspects** etc.
Demo Implementation – RCP Application

- Incorporated Simulator of PTZ Cameras and
- End User Desktop Application
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Demo Implementation – RCP Dependencies
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Shared Staff – Communication
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Shared Staff – Audio, Video and PTZ Control
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Desktop Application – RCP User Interface
Demo Implementation - RAP Application

- Incorporated Simulator of PTZ Cameras and
- End User Web Application
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RAP Application – Web User Interface
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RAP Application – Video Control Interface
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RAP and RCP Applications - running staff
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Results in pictures – All on Windows 2003
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Results in pictures – RAP in both FF and IE
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Results in pictures – RAP on FF and Ubuntu
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Results in pictures – RAP on FF and MacOS
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Results in pictures – Web and Net Cameras
Thank you for your attention.

Any questions?