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November 2008, Sofia

Get Connected and Distributed

Internet Enabled Systems
New dimensions of scalability

Christo Radev and Mladen Nochev, November 2008, Plovdiv

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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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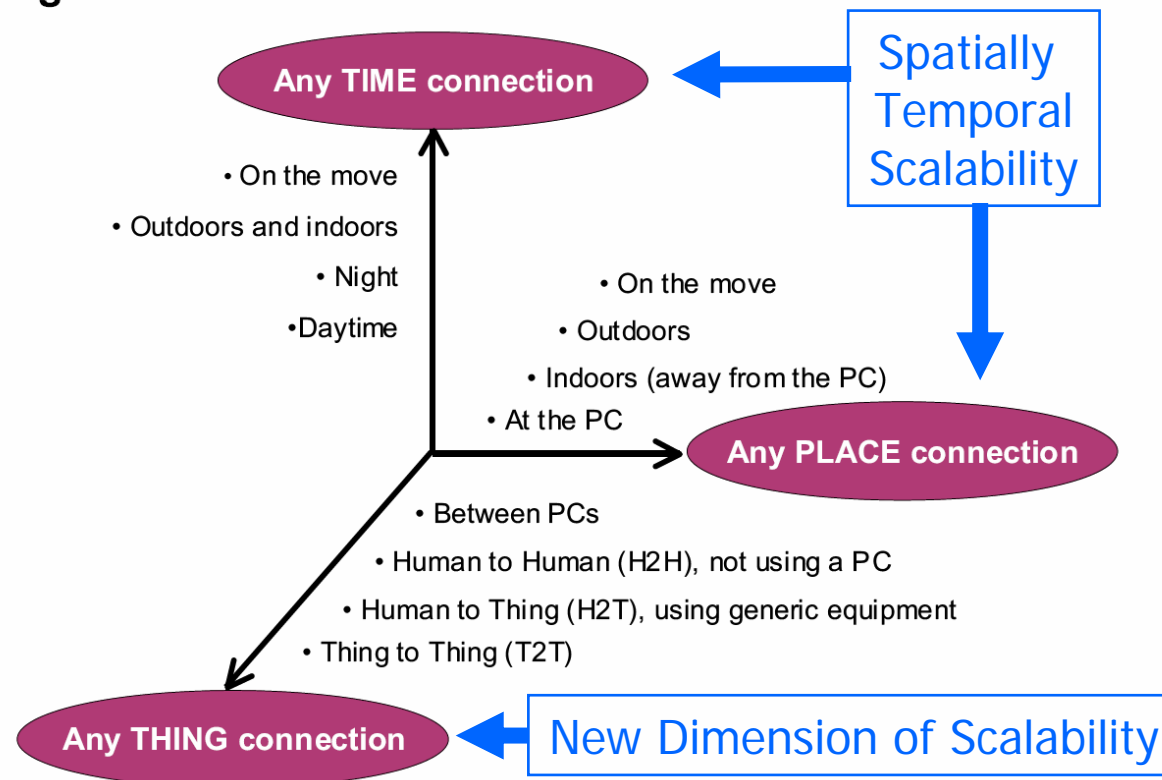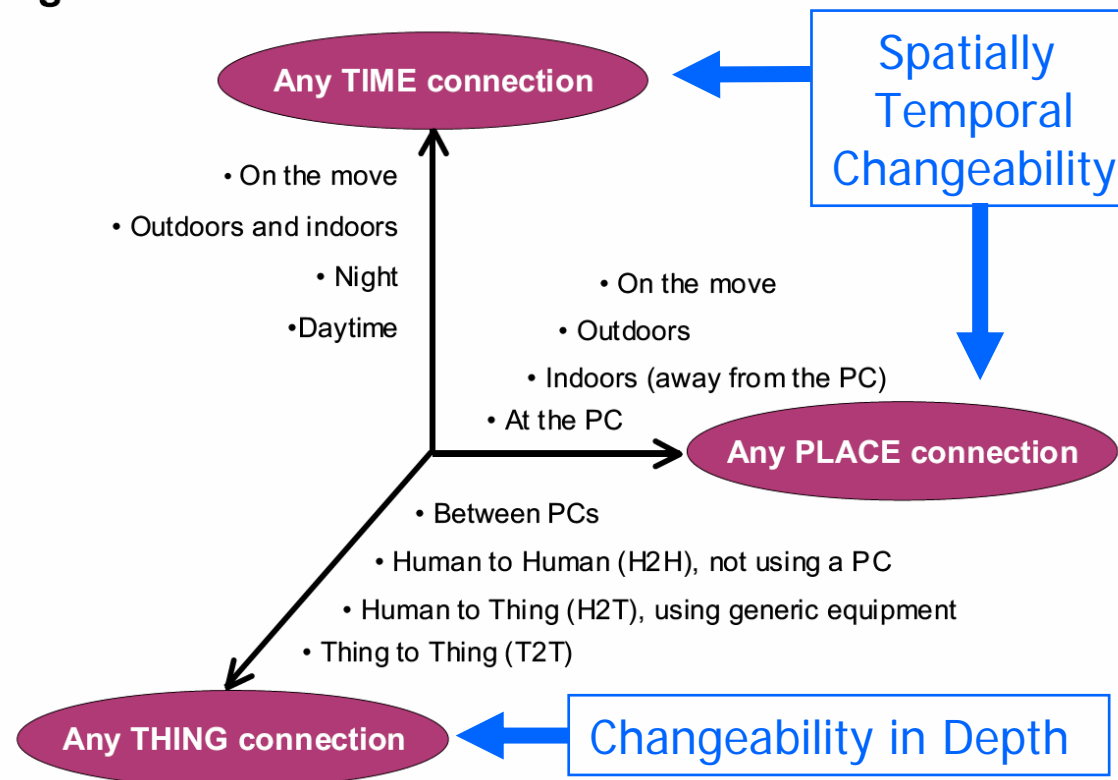### Christo Radev and Mladen Nochev, Plovdiv

Spots of the Openness
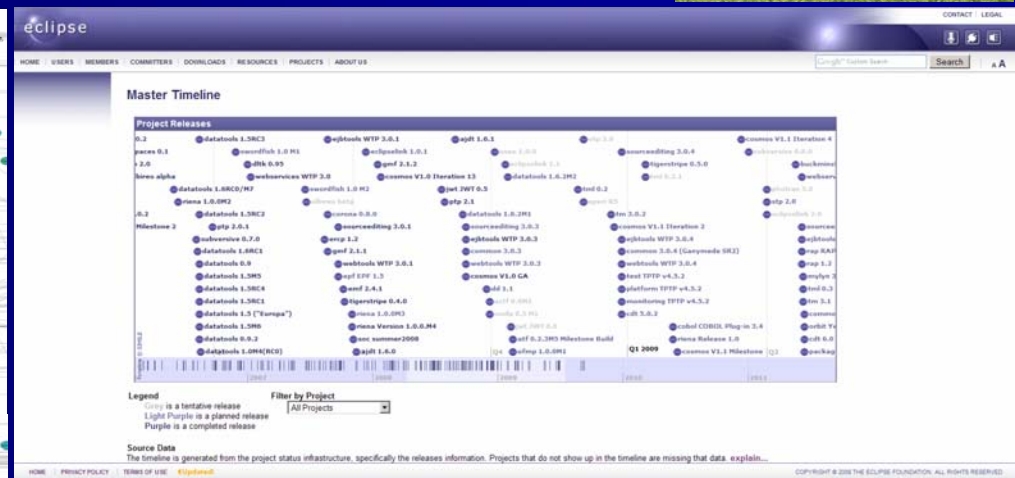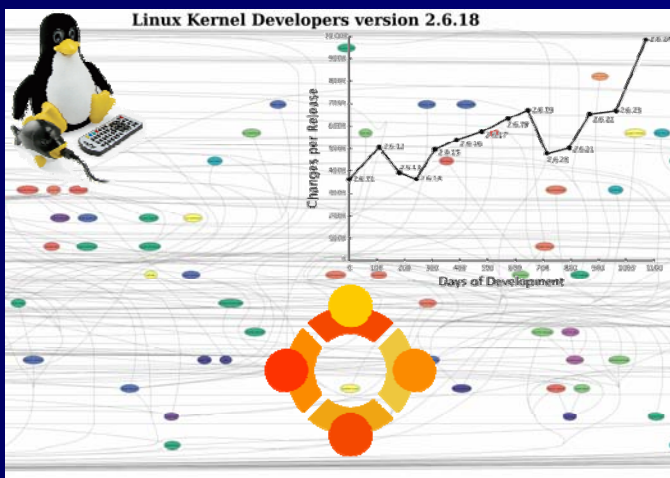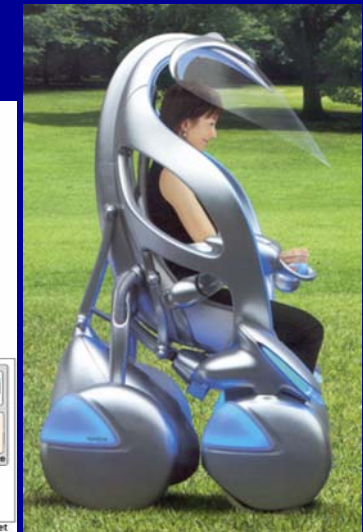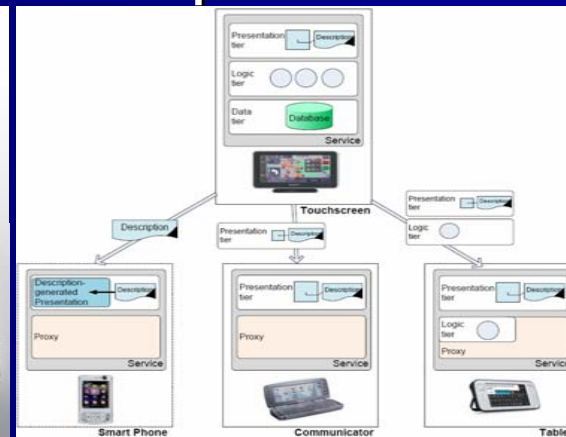
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Internet of Things

Figure 1 – A new dimension

Any TIME connection

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

Any PLACE connection

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

Any THING connection

Spatially Temporal Scalability

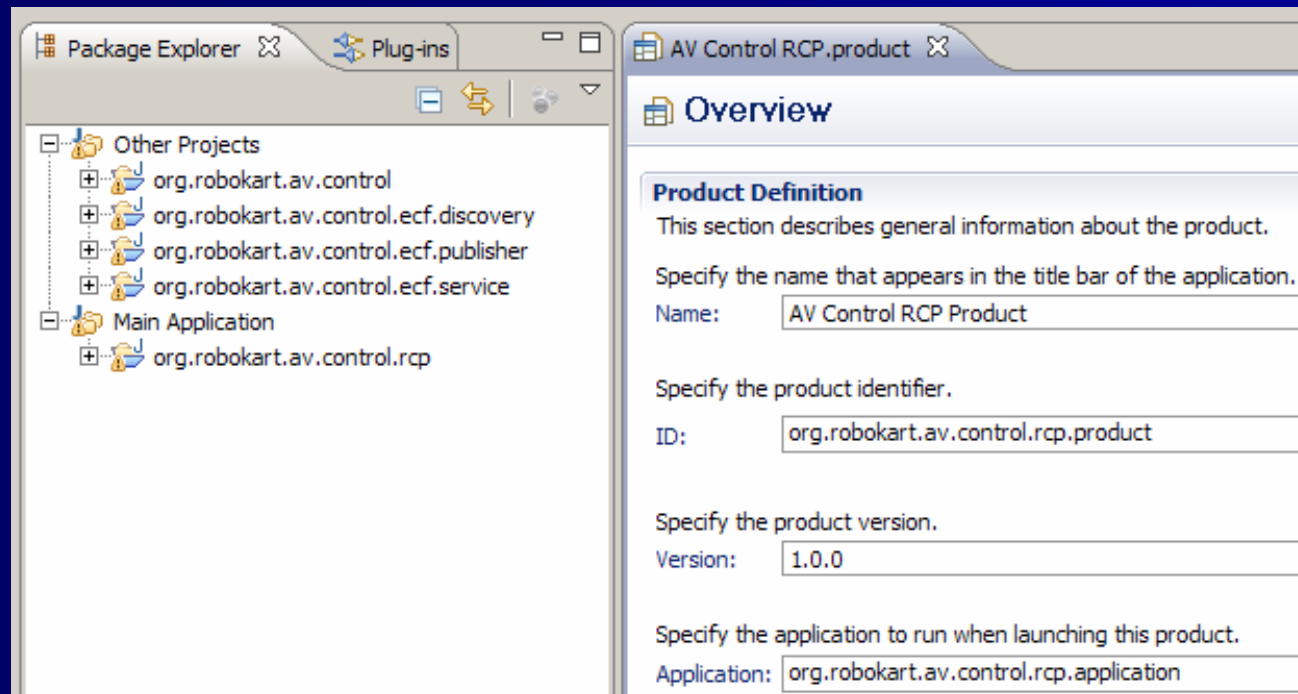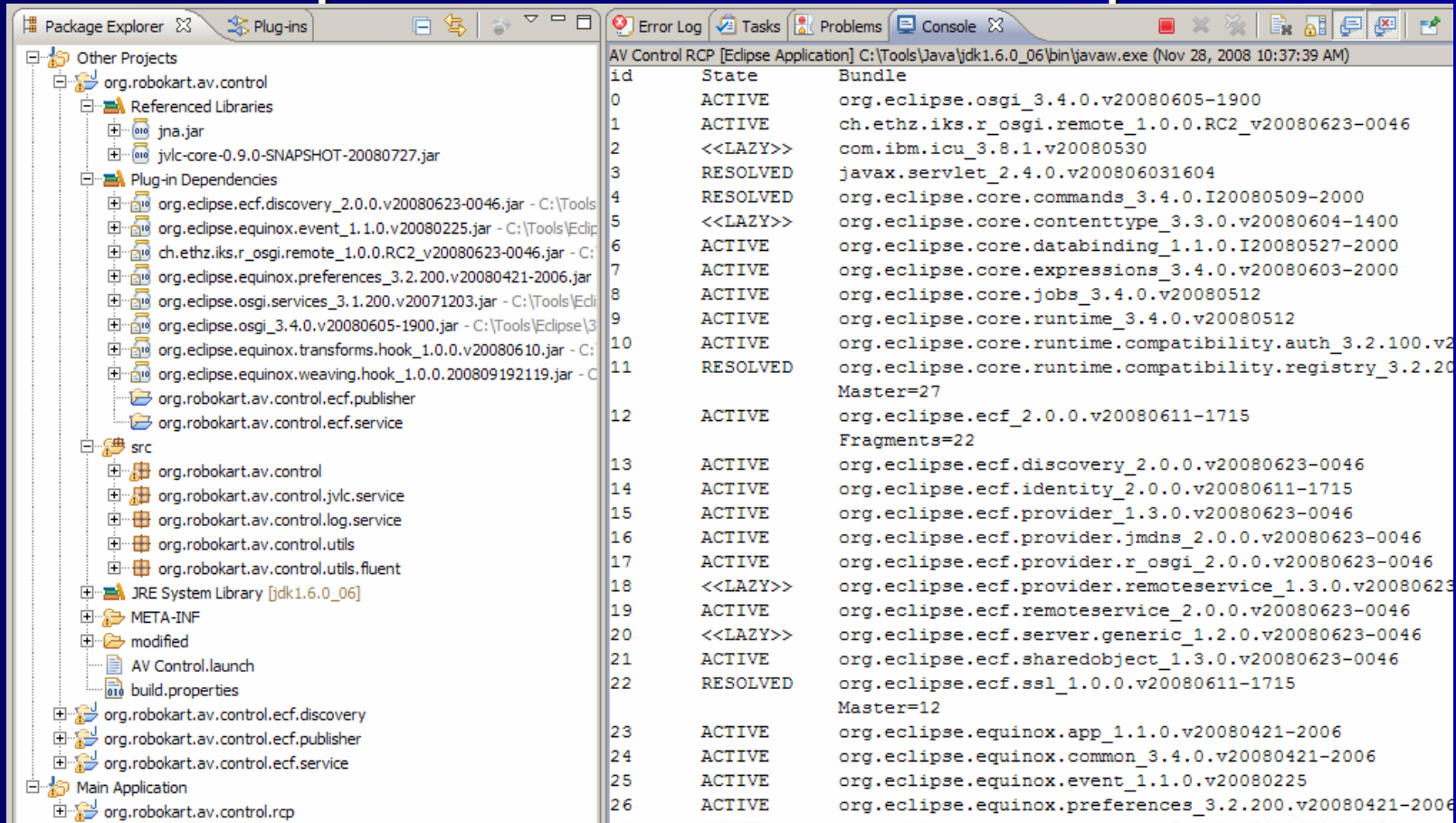New Dimension of Scalability

Source: ITU adapted from Nomura Research Institute

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Things with Lifestyle

Figure 1 – A new dimension

- Any TIME connection
- Any PLACE connection
- Any THING connection
- Spatially Temporal Changeability
- Changeability in Depth
- On the move
- Outdoors and indoors
- Night
- Daytime
- On the move
- Outdoors
- Indoors (away from the PC)
- At the PC
- Between PCs
- Human to Human (H2H), not using a PC
- Human to Thing (H2T), using generic equipment
- Thing to Thing (T2T)

Source: ITU adapted from Nomura Research Institute

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"Technology jam" or "a gem of a child"
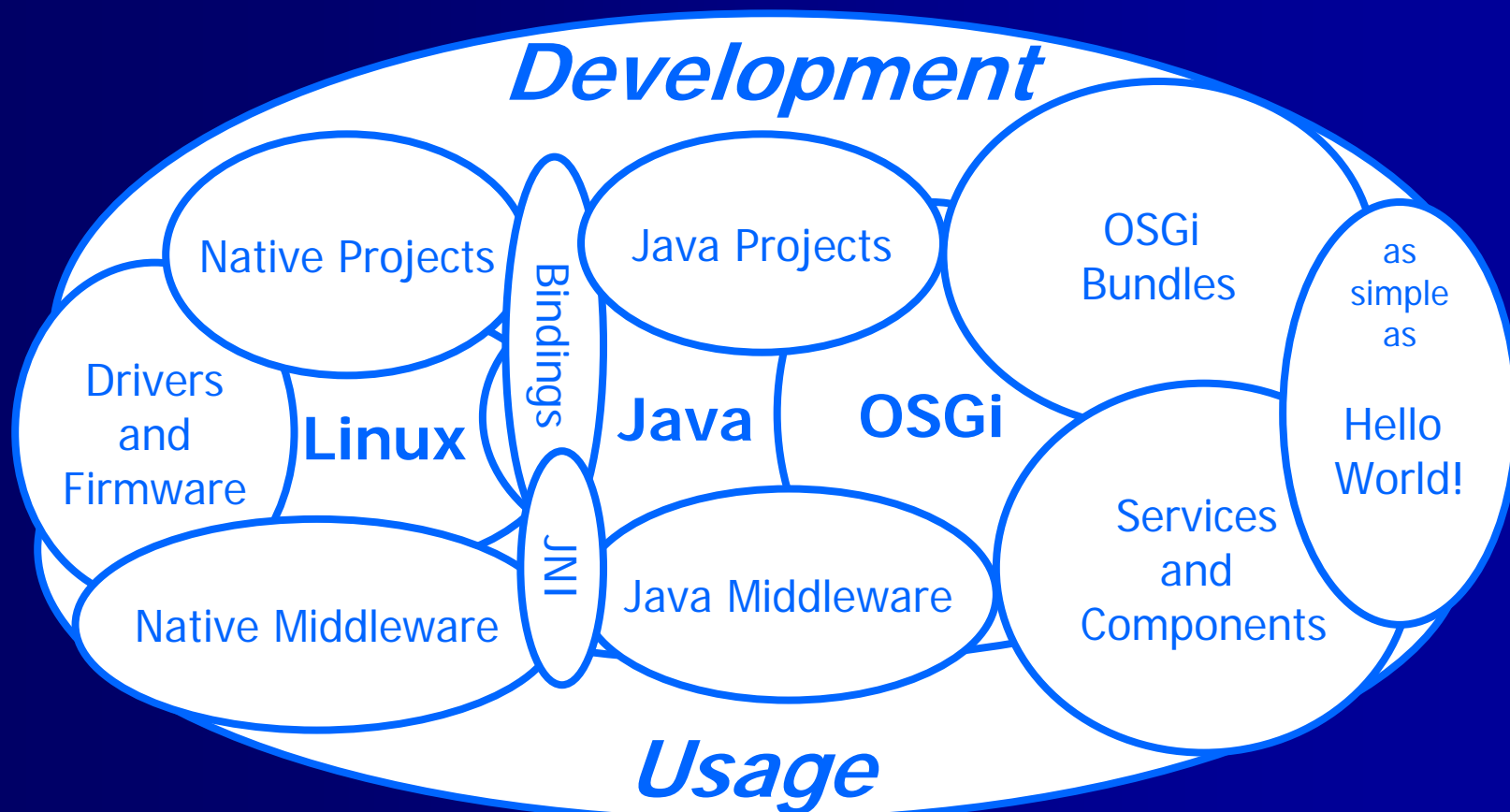
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Proof of concept usecase

- 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, BarkIDS, eConference,
- VideoLAN's VLC Media Player, JVLC etc.
- Fluent interface, Dependency Injection,
- Inversion of Control, Aspects etc.

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Demo Implementation – RCP Application

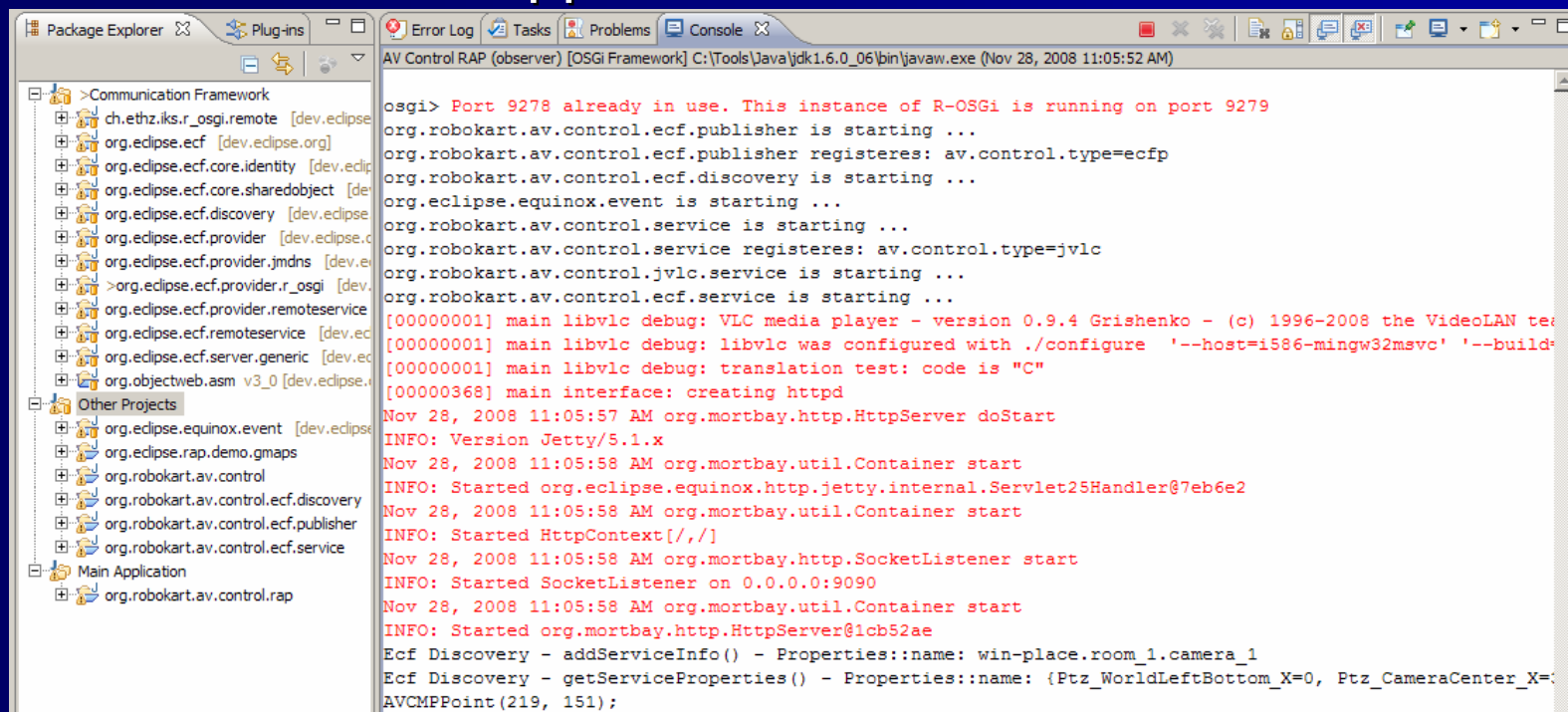- Incorporated Simulator of PTZ Cameras and
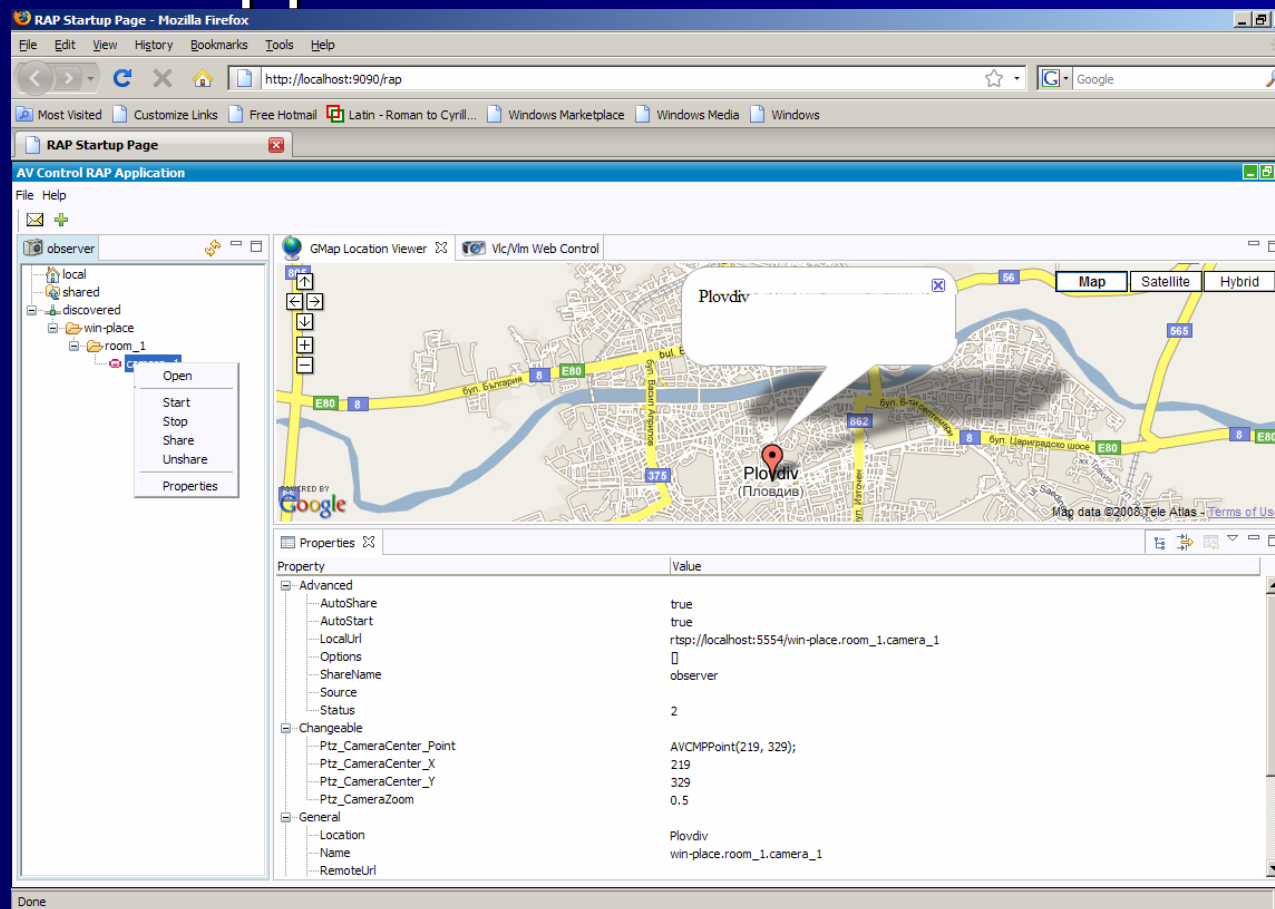- End User Desktop Application

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Demo Implementation – RCP Dependencies

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Shared Staff – Communication
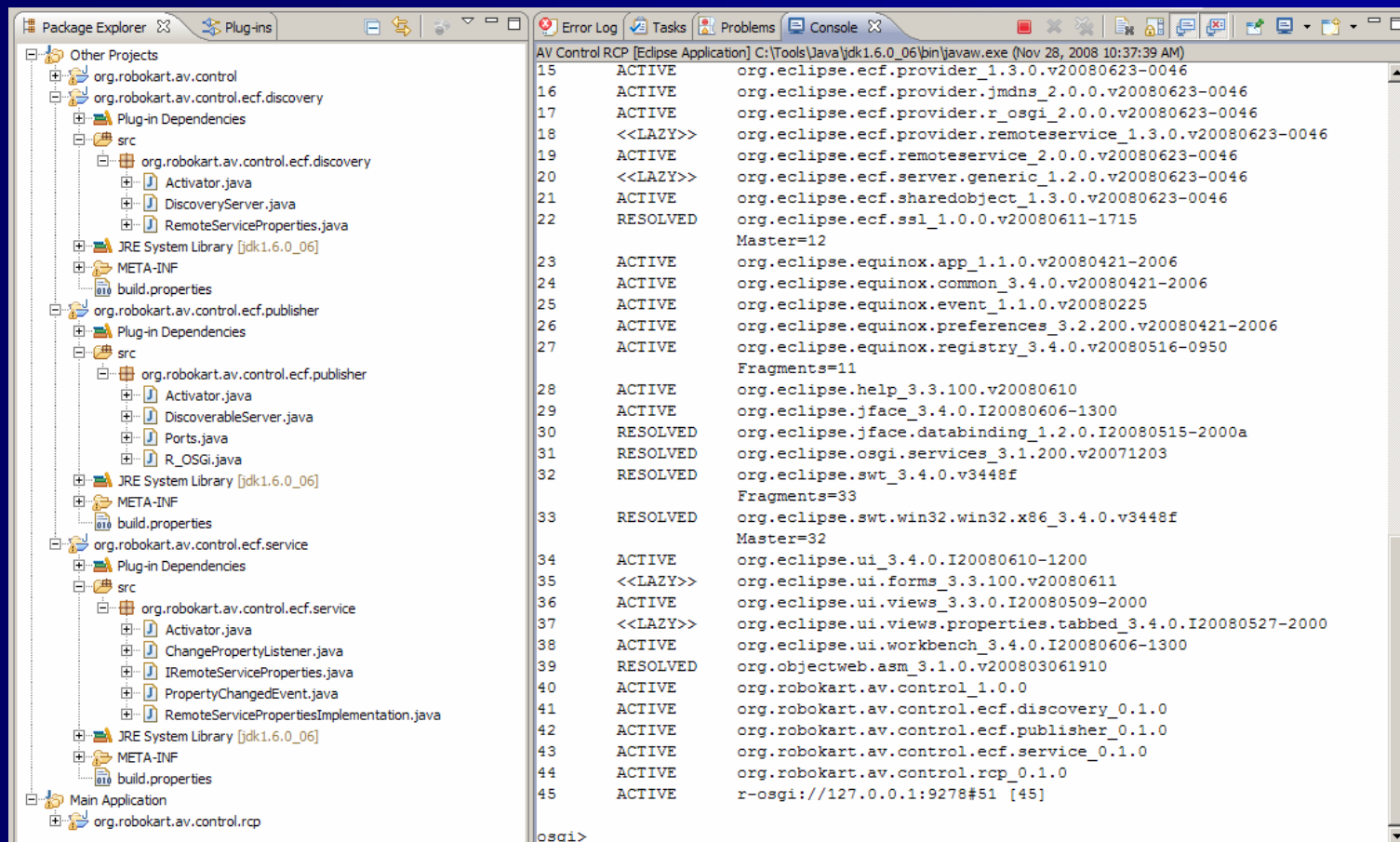
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Shared Staff – Audio, Video and PTZ Control

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Desktop Application– RCP User Interface
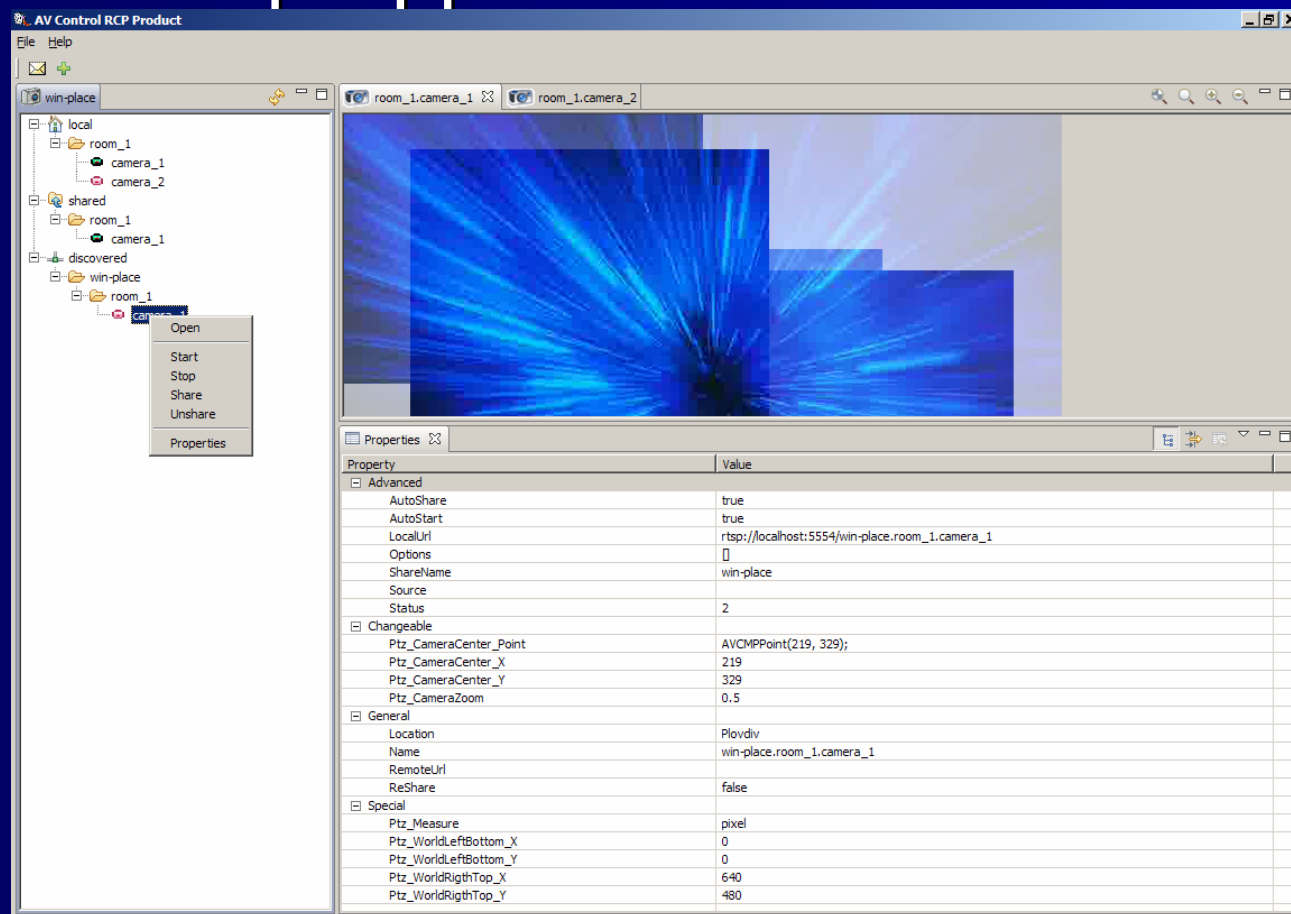
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Demo Implementation – RAP Application

- Incorporated Simulator of PTZ Cameras and

- End User Web Application

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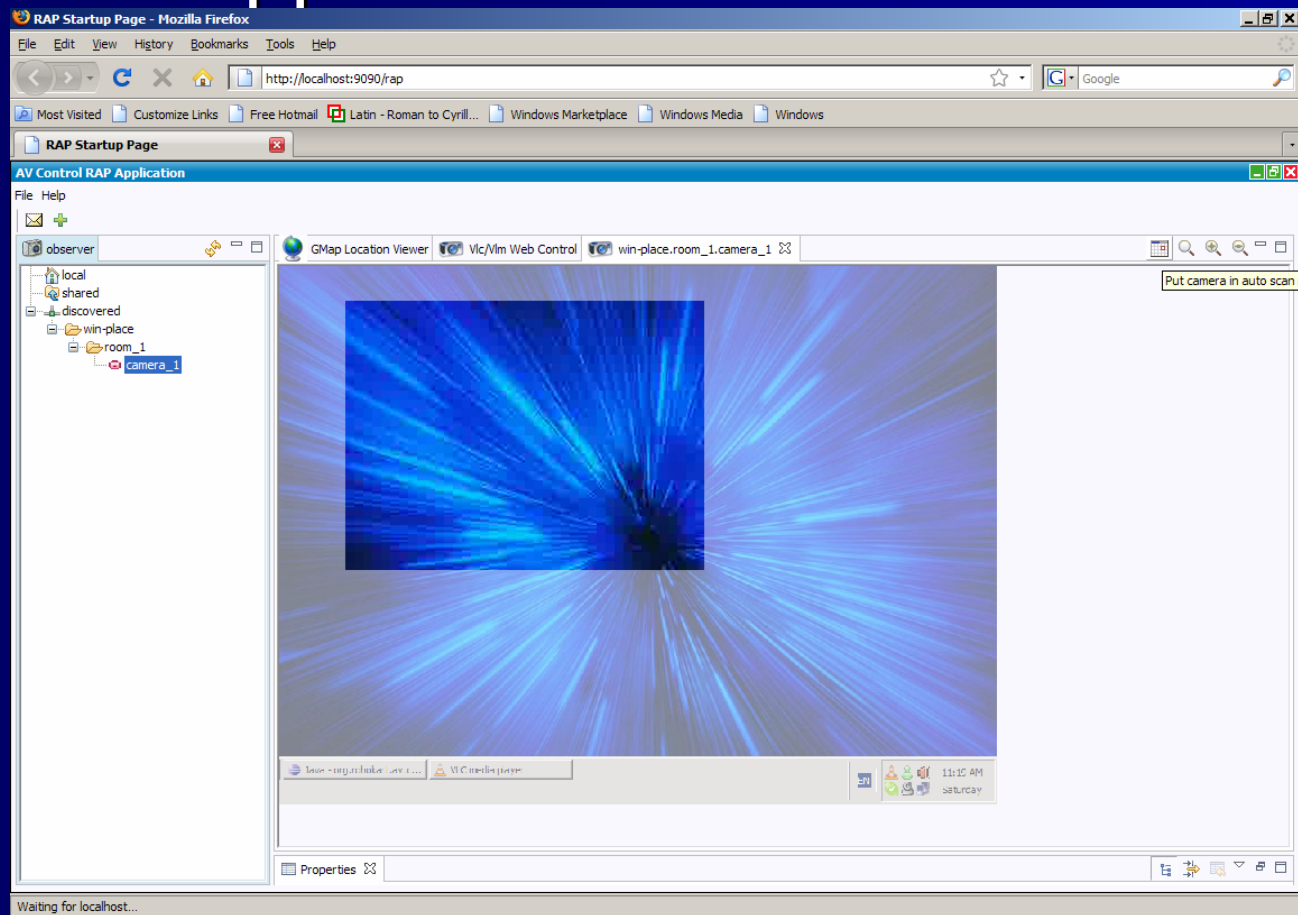
RAP Application – Web User Interface

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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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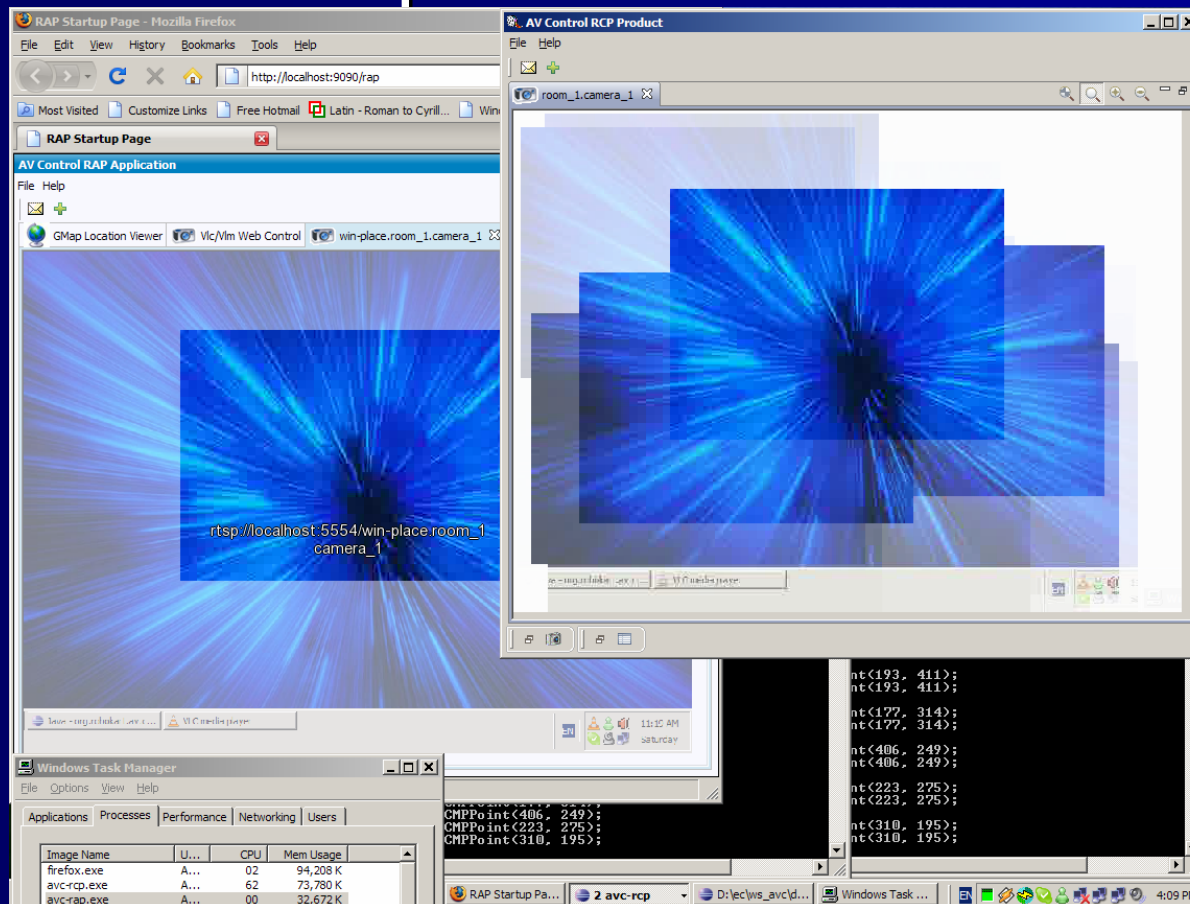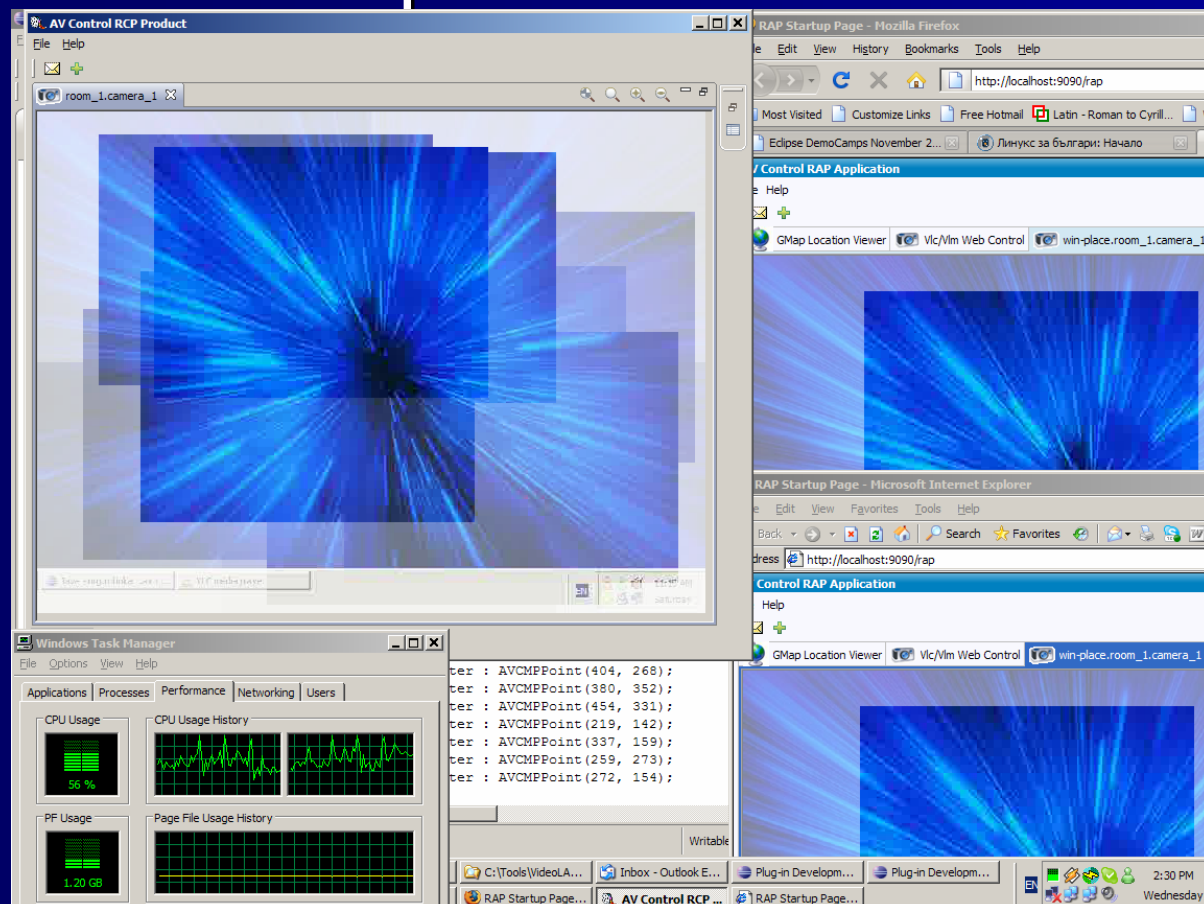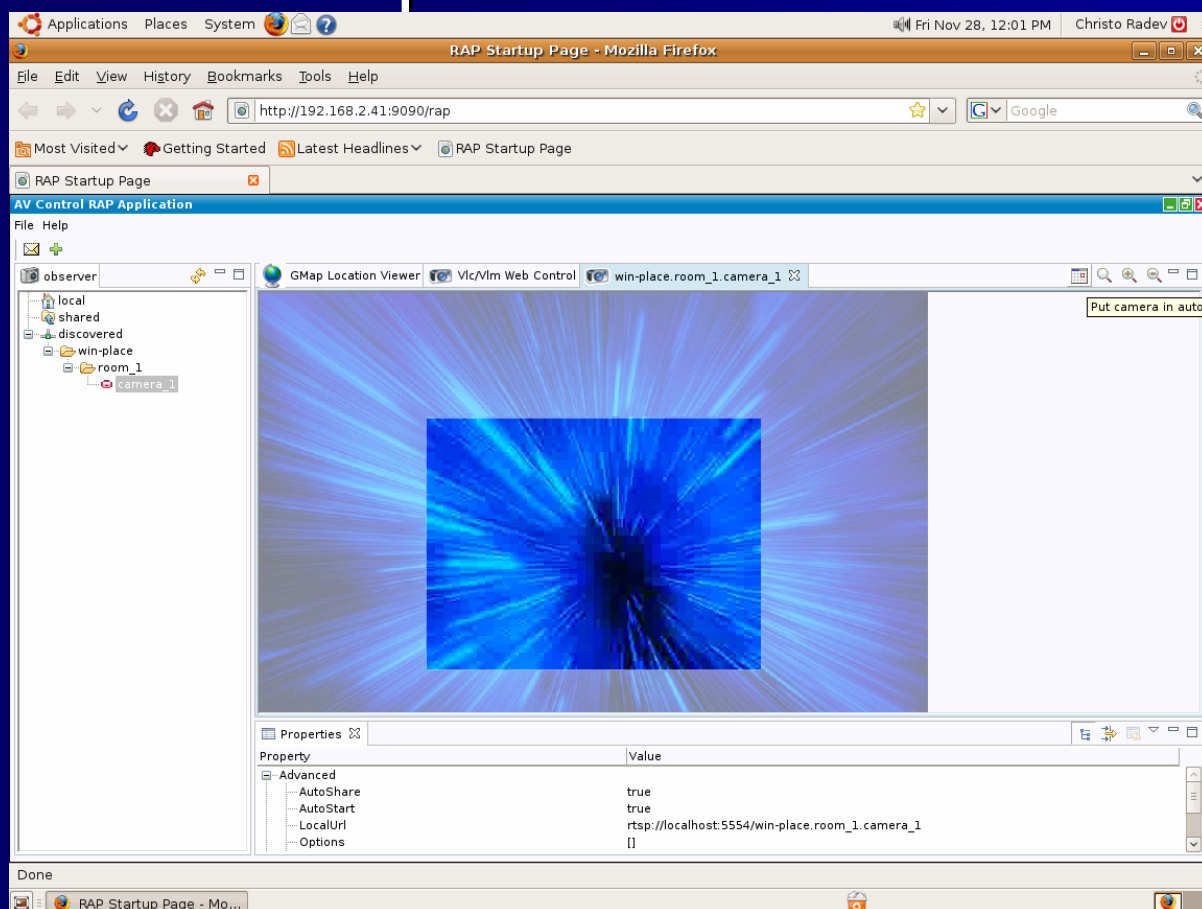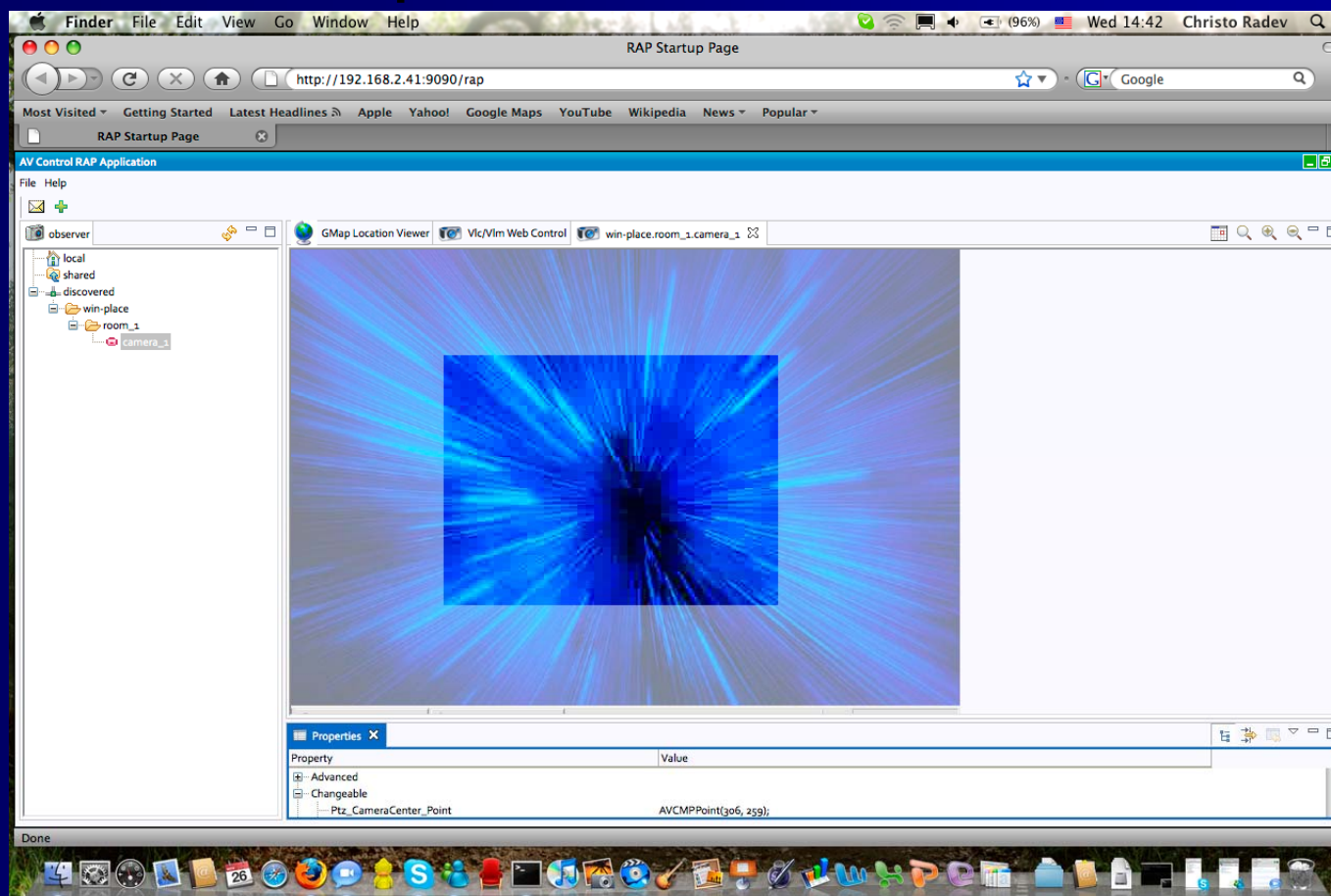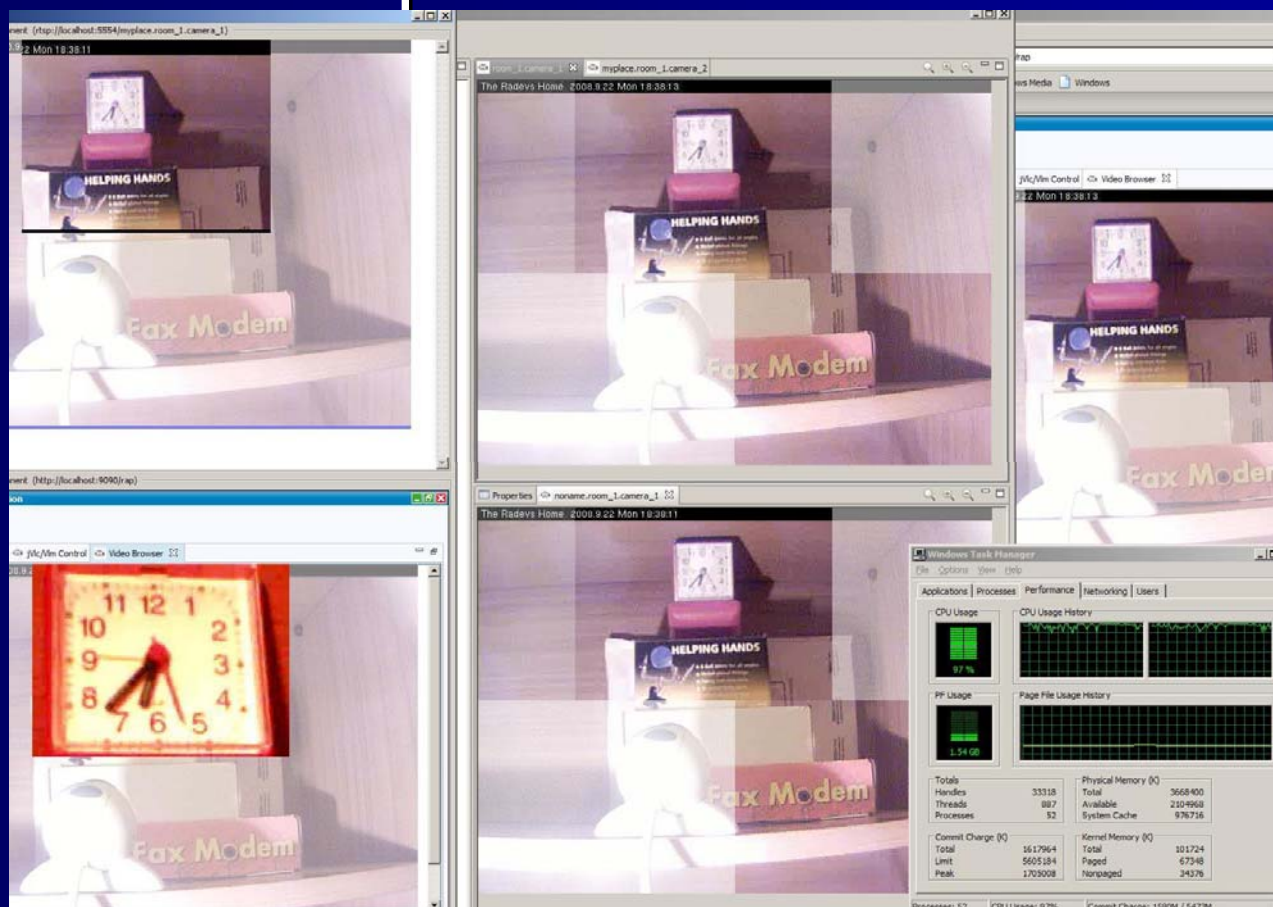
Results in pictures – RAP on FF and MacOS

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Results in pictures – Web and Net Cameras

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Thank you
for your attention.

Any questions?