Medany Platform

Industrial usage of EMF, OAW, eRCP and Eclipse Platforms

Olivier Prouvost
Anyware Technologies
(olivier.prouvost@anyware-tech.com)
Agenda

- Medany platform
  - Initial Needs, scope
- Eclipse benefits
  - Architecture: platforms
  - EMF, eRCP, OAW, ...
- MDA Approach
  - Metamodels, Generators, Studio
- Demo: Using the tools
  - Medany model
  - Generation
Initial Needs

• Acquiring data on mobile devices:
  › texts, numerics, multimedia (pictures, sounds...)
  › external devices (glucometer, sensors...)

• Synchronizing these data on a server

• Notifying actors: SMS, Mail, ...

• Having applications to access to data (web...)

Initial Constraints

- Data security:
  - Access restrictions (Medical data, global data...)

- Small bandwidth

- Simplicity
  - usage: for nurses, doctors...
  - update: interfacing with other devices must be easy.
  - synchronization: automatic, two ways, disconnection
Medany Applications

Local acquisition

Mobile devices

synchronization

Server / Storage

application update

Update/Create data

Web client
Medany Scope

- Runtimes based on eclipse components
  - implement initial needs
    - pda acquisition, synchronization, notification, eUpdate

- Tools to generate application(s) based on runtimes
  - model editors for application
  - projects, wizards, launch configurations
  - a set of generators based on model
Runtime Platforms

- Eclipse Architecture is used to define business platforms
- Platform define extension points
  - specific to business needs: device acquisition
- Platform is then extended to build the final application
  - glucometer device extension to get glucometer data
- Business Platform can extend another platforms:
  - RCP
  - eRCP
## Runtime platform - Device Side

<table>
<thead>
<tr>
<th>Medany Device Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Entity definition</td>
</tr>
<tr>
<td>• Drivers contributions</td>
</tr>
<tr>
<td>• Application logic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medany Device Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cards management (navigation, edit)</td>
</tr>
<tr>
<td>• Binary acquisition</td>
</tr>
<tr>
<td>• Synchronization</td>
</tr>
<tr>
<td>• Rights management</td>
</tr>
<tr>
<td>• Application structure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eclipse eRCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>• eSWT</td>
</tr>
<tr>
<td>• eUpdate</td>
</tr>
<tr>
<td>• eWorkbench</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eclipse OSGi</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Plugins architecture</td>
</tr>
<tr>
<td>• Extension points</td>
</tr>
</tbody>
</table>
Medany Tools

- Based on Eclipse IDE.
- Defined in specific plugins which depends on
  - EMF
  - OpenArchitectureWare
- Used with other projects:
  - DTP for database management
  - WTP for web server management
Medany Tools Picture

- Medany Ecore Model
  - EMF Generation
    - medany model
    - medany editors
    - topcased
  - OAW generators
  - Appli templates
  - glue actions
- Eclipse Platform, JDT, Team, EMF, Topcased, WTP, DTP, OAW
- Medany Studio
  - EMF Medany Model Editors
    - Edit
      - Application Model
      - eRCP generator
      - web generator
      - web admin generator
      - synchro generator
      - RCP generator
- Generated applications
Medany Ecore Model

- Medany application is defined in an Ecore Model
- This model designs the initial needs
Medany Application Model Editors
Eclipse technologies

• Open Architectureware
  ▸ used to generate applications
  ▸ strong concepts :
    - Xpand template language
      - polymorphic language bound to model
      - aspect programming
  ▸ lots of tools :
    - editors
    - debugger
OAW Principle.

[Diagram showing the process:
- Metamodel (1) connected to a model editor.
- Model (2) generated by the editor.
- Workflow (3) reading the generated files.
- Xpand Templates (3) aggregating files.
]
Demonstration

- Look at meta model
- Look at model
- Generate 4 applications
- Configure web servers
- Launch servers and device application

- Look at generators