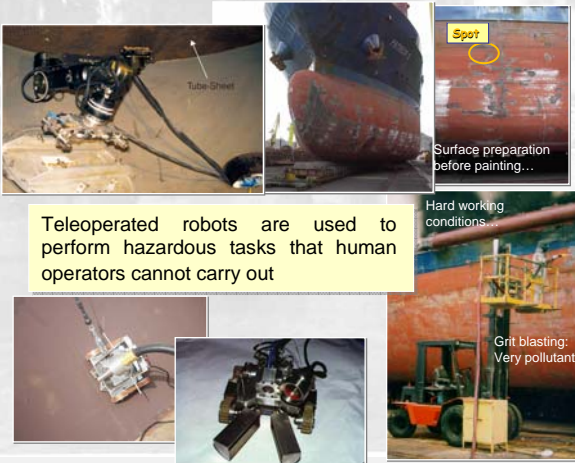


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Experiences

Robots developed by DSIE using architectural frameworks. From Nuclear Power Plants to Shipyards.



Teleoperated robots are used to perform hazardous tasks that human operators cannot carry out

The EFTCoR family of robots

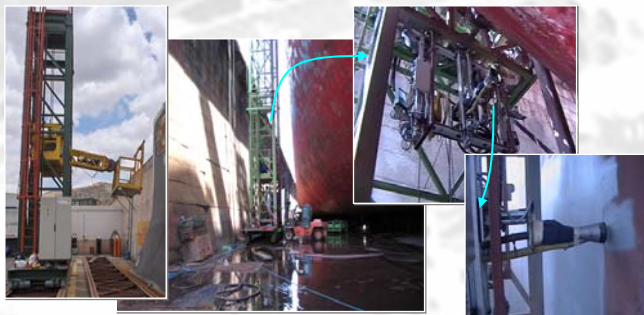
Research project supported by the European Commission under the V Framework Program GROWTH. Contract nº G3RD-CT-00794



Environmental Friendly and Cost-effective Technology for Coating Removal

EFTCoR pursuits the development of a new industrial technology for hull coating removal with waste separation and disposal and recycling. The cleaning process is automated by the development of a family of teleoperated robots.

XYZ table mounted on a crane. Tests in NAVANTIA shipyards



Lázaro climbing vehicle



In response to the special industrial requirements of the EFTCoR project, the control units of the cranes has been implemented using PLCs.

The climbing vehicle uses permanent magnets, and carries a cleaning tool. The execution platform is an on-board embedded PC with RTLinux Operating System.

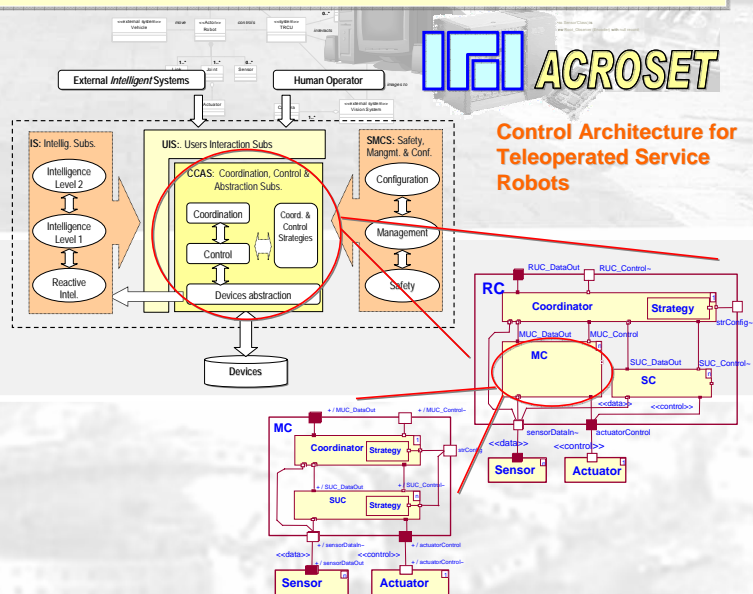
SW Architecture for Teleoperated Robots

The framework should:

- Not impose a concrete architecture.
- Permit to reuse components in systems with different architectures (distinction between components and their interaction patterns).
- Permit the implementation of components both software or hardware

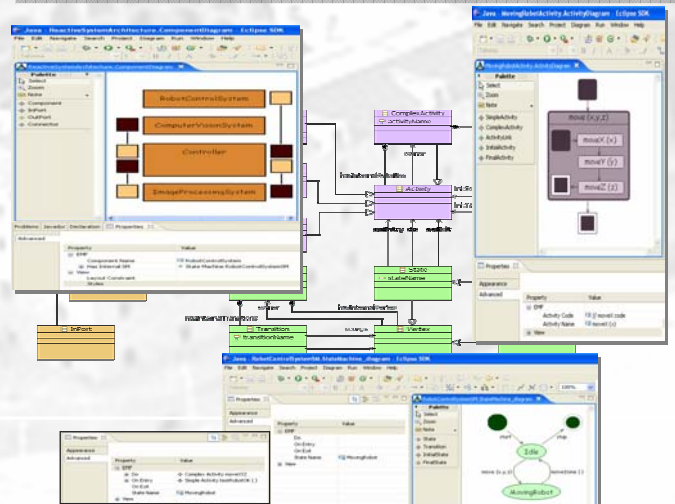
Most of **CBD approaches** consider that components **should** be binaries units of deployment.

We prefer to consider that they **could** be binaries units, **but also design units**, providing that they **encapsulate behaviour and data, provide and require functionalities by means of ports and are subject to composition.**



MDE: A Meta-model for ACROSET

We have adopted a **MDE approach** to develop the software architecture of robotic systems based on the **abstract components proposed by ACROSet**, using the **Eclipse** development environment and plug-ins. Different transformations make possible to map the **ACROSet components** to different platforms.



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