

The OROCOS Project

What's "glue"?

Some basic ideas on interoperability of robotic softwares

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Leuven, september 1st, 2001

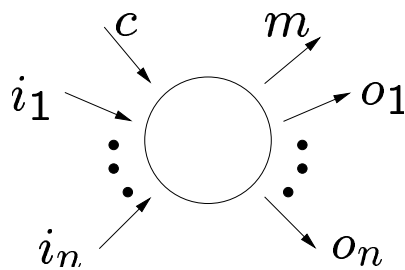


Development of a **software framework** that would:

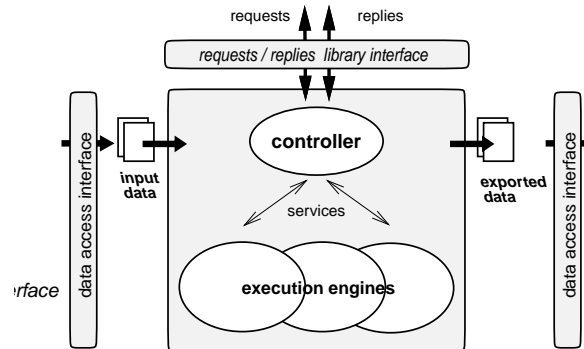
- Maximize **reusability** of various codes
- Allow **software and application sharing** between labs and researchers
- Let researchers define, develop or test **several robotic systems** with no side effects on existing functionalities

e.g. { CoolBOT, GenoM, SmartSoft, ... } × { Vision, Control, Modeling, ... }

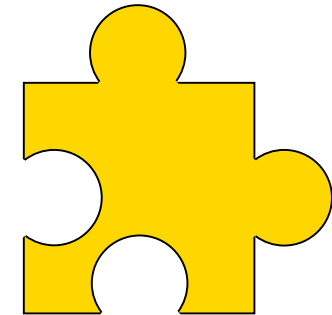
- Reusability or software sharing can be achieved with a **modular architecture**



CoolBOT

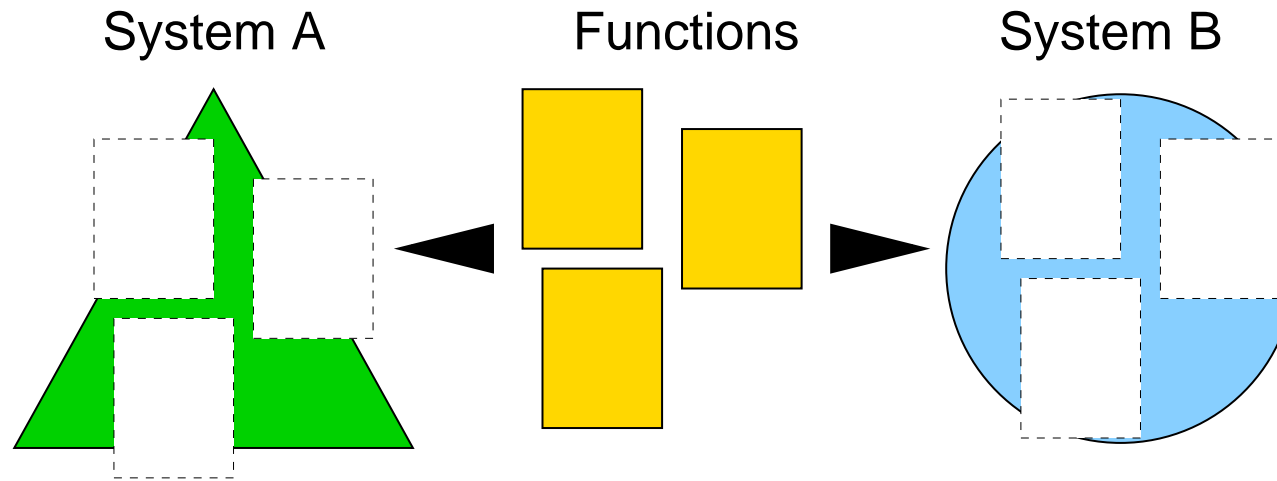


GenoM



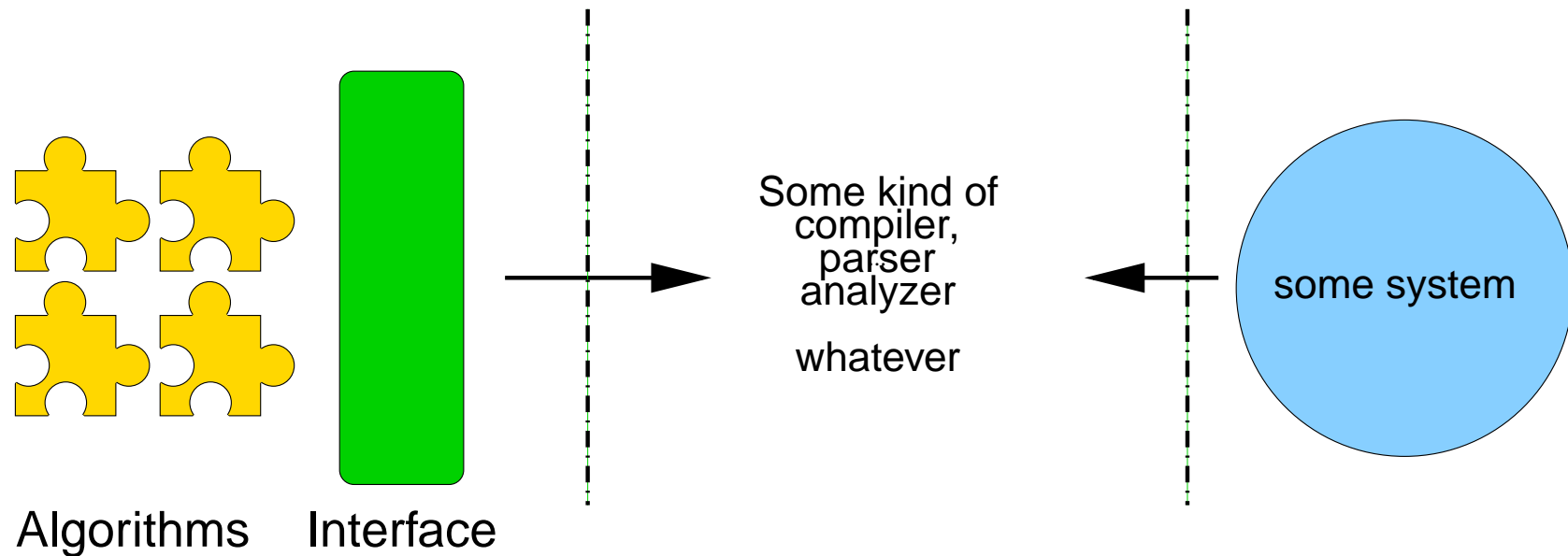
SmartSoft

- Widespread idea though **different visions and goals** are used in practice



- Why not a “single system”?
 - different contexts, different requirements, ... different ideas
 - e.g CORBA vs. custom protocol, VxWorks vs. Windows, ...
 - “single system” is a very long term objective.

- According to the different kind of modularity we want, the “glue” that will make things work together is actually the **interface** between systems and functionalities.
- This **interface** should exhibit all **the necessary information** that will let the different systems **invoke the services** provided by the functional modules.



- We'll need to define (or use an existing) **language** that will describe the modules interface.
- We'll need to define an **execution model** of the services.
- We'll need a **centralized** description of **data structures** that might be exchanged between modules.

This allow the inputs and outputs of services to be easily described.

This should ideally also be decentralized but... how?