

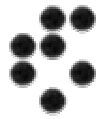
**Jožef Stefan
Institute**



A Generic Simulator of Control Systems

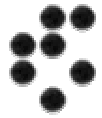
**For Application Development and
Testing**

**Dragan Vitas, Mark Plesko, Gasper Tkacik, Ales
Pucelj and Igor Kriznar
JSI and Cosylab Limited.**



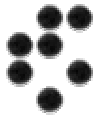
Agenda

- 15 minutes simulator overview
- 5 minutes simulator in action



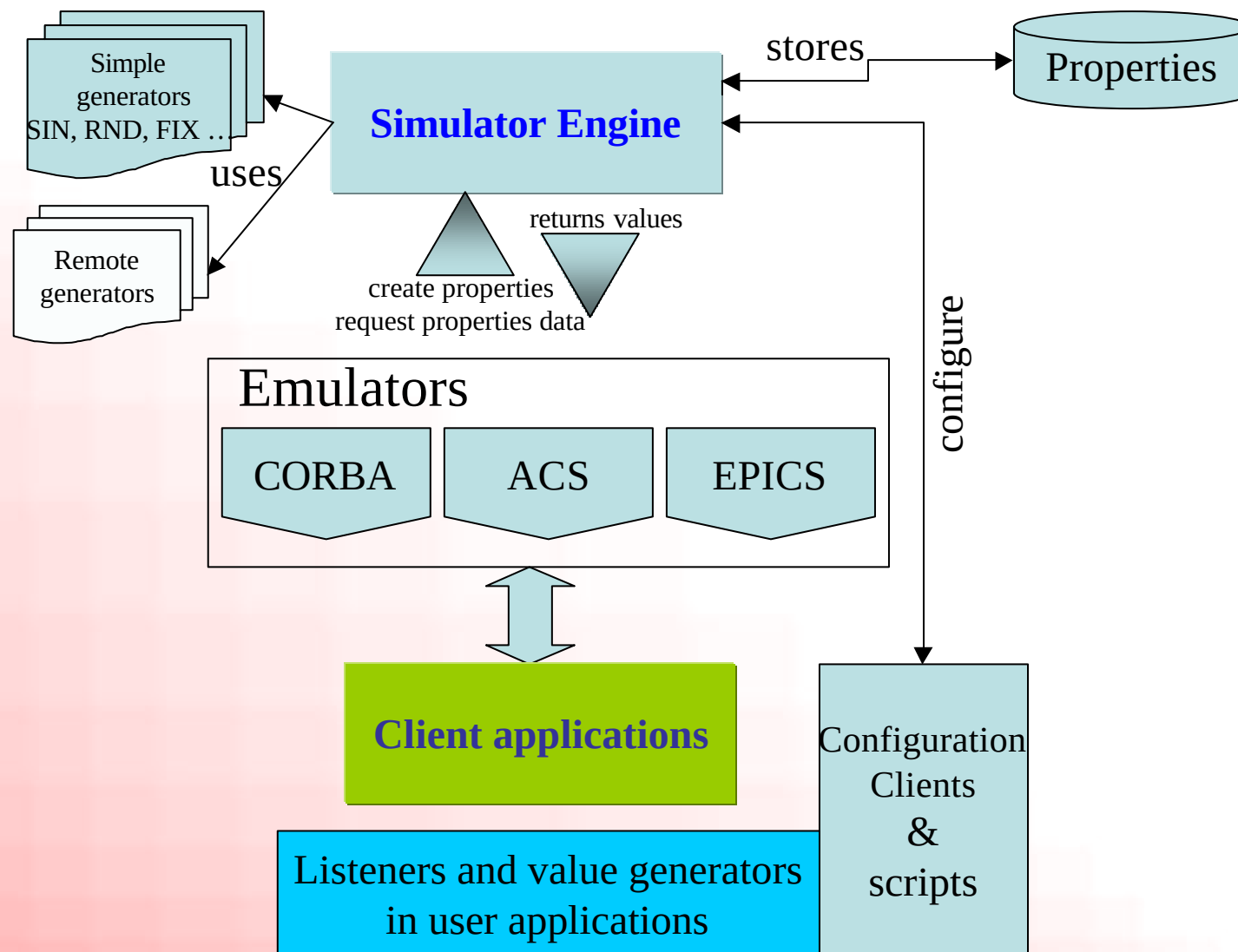
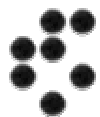
Why simulator

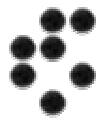
- Probing
- Testing
- Performance evaluation
- Problem resolving
- Prediction of the application scalability



Design

- Not specific to any particular control system software.
- Flexible
- Easy implementation of new specifics.
- Applications have to be tested without being modified.
- The user must be able to write extensions in a language and platform of his choice.

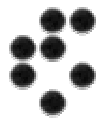




Implementation

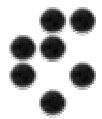
Multi-platform multi-threaded CORBA server
in C++ language

- Multi-language, multi-platform clients can be created.
- Advantages of the CORBA infrastructure can be exploited.



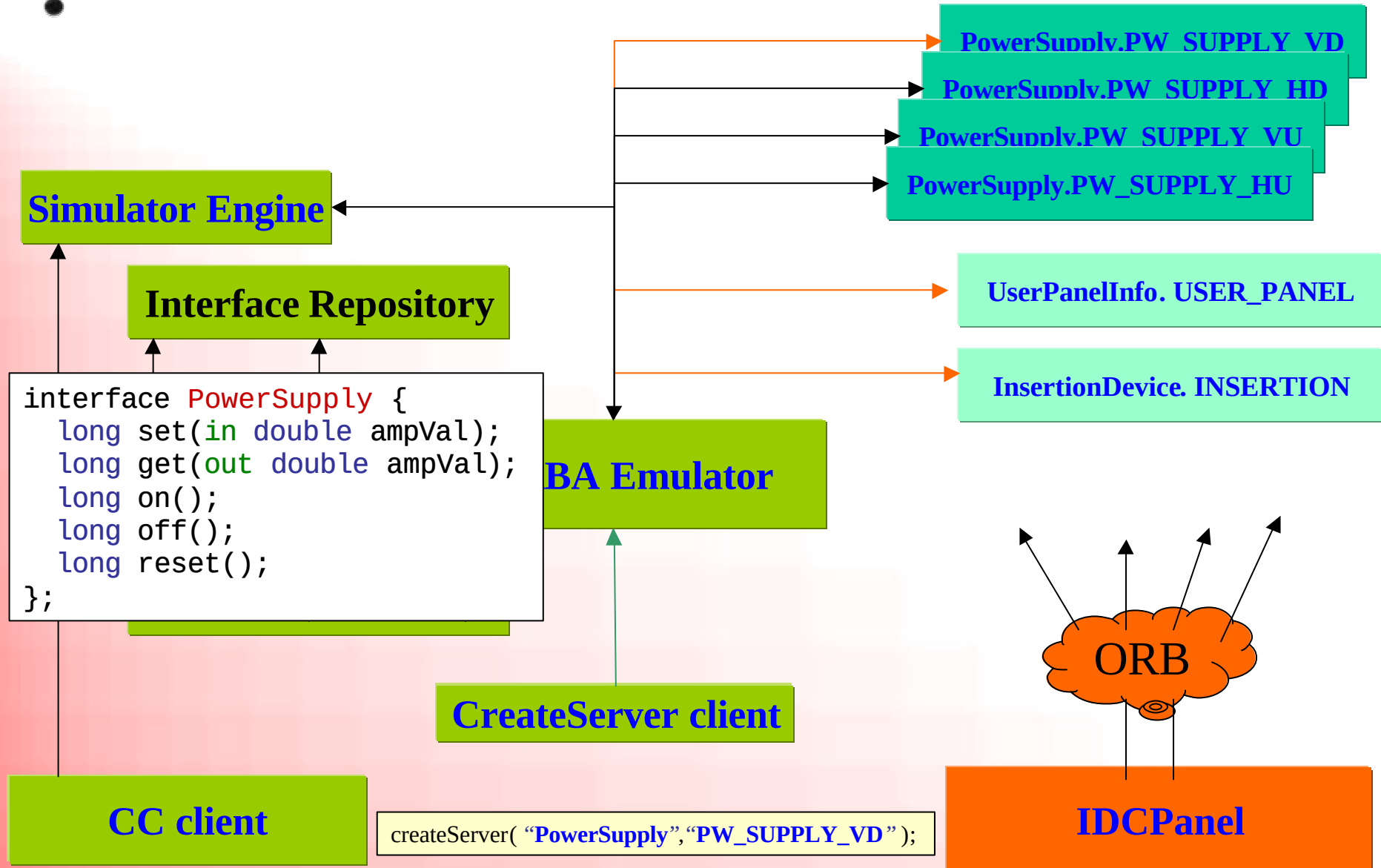
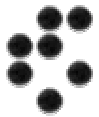
The Engine

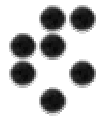
- Properties
 - Name/value pairs with types and configuration data
- Value generators
 - Predefined: RANDOM, SINUS, FIXED ...
 - Remote – user generators
- Listeners
 - Callback for notification when a value change occurs



Emulators

- CORBA
 - Object factory
 - Dynamic Skeleton Invocation (DSI)
- ACS
 - All parts of the ACS system are engaged
- EPICS





Demo

- Testing of the IDC Panel application developed for HZ Japan