



5th 4DIAC Users' Workshop

ETF A 2015, Luxembourg
September 8th

Welcome and Recent Activities of the 4DIAC Open Source Initiative

9:00

Using IEC 61499 for Virtual Commissioning
Avoiding overwhelming external systems by events coming from
IEC 61499 control applications
Integrating IoT for Industrial Applications using IEC 61499
Certified extensions to 4DIAC

Coffee break 11:00

Example of a Cyber-Physical Attacks Investigation on IEC
61850/61499 equipped PV Inverters using 4DIAC
Modular machines implemented in 4DIAC

Open Discussion

Lunch Break 13:00

Programming Distributed Embedded Real-Time Control Systems with 4DIAC

The half day workshop will be accompanied by a half day hands on session where the 4DIAC team will be available for detailed discussions and explanation on using 4DIAC as well as on implementation details. The following topics can be covered:

- Short Introduction to IEC 61499 and 4DIAC
- Guided small control application example
- Implementing a control application for a simulated press
- Extending 4DIAC-IDE
- Overview on FORTE real-time execution and communication architecture

14:00

15:30 Coffee break

18:00

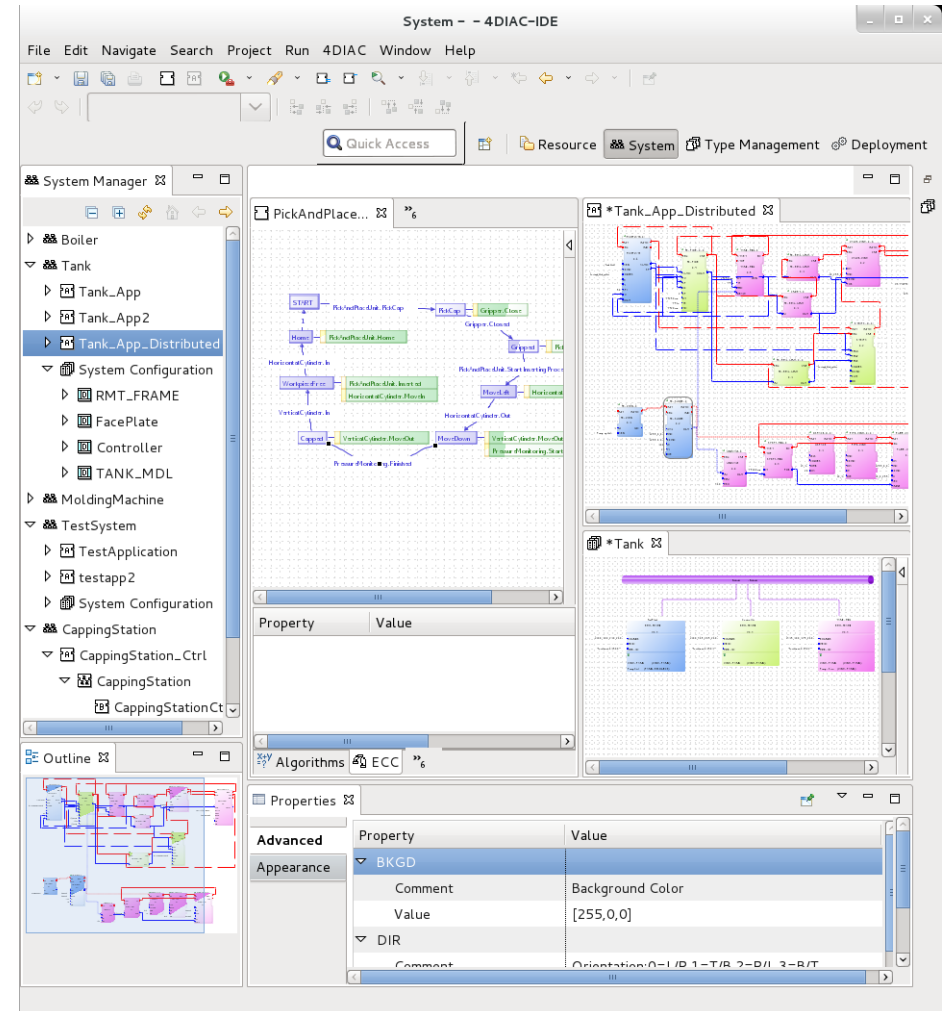


**Welcome and Recent
Activities of the 4DIAC
Open Source Initiative**

4DIAC Overview



- Goal: **open source solution** of the IEC 61499 standard for distributed industrial automation systems
 - Common framework for the further development of IEC 61499
 - Leveraging the use of IEC 61499 within industry
- Application domains:
 - Building automation, process industries, laboratory automation, smart grids, machine control, sequence coordination, ...
- Components of solution
 - Engineering tool
 - Small real-time capable runtime environment
 - Reusable component library
 - Example applications
- Open Source License
 - Eclipse Public License
 - Allows usage in products and proprietary add-ons



- Open source since **July 2007**
- 300 – 400 Page hits/ week
- > 22.600 Downloads
- 399,298 lines of code
- 9 comitters from 5 companies

In the last year we had:

- 2 major and 4 minor releases
- 4900 downloads
- 101 closed tickets
- 650 commits from **12 contributors**
- 445 forum messages

Eclipse Project



- 4DIAC finally got accepted
- Under IoT top-level project
- New Logo
- New Web-page: <http://www.eclipse.org/4diac>
- Currently working on
 - code clean-up
 - code transfer to



- 4DIAC-IDE
 - Monitoring is extended to the internals of Composite Function Blocks
 - New improved editor for service sequence diagrams
 - Project explorer combining all project management tasks
 - Tree-based FB palette for all FB network editors to improve FB network editing
 - Modernized icons
- FORTE
 - Support for the PFC 200 PLC from WAGO
 - Performance and memory usage improvements in FORTE
 - New communication protocol EclipseSCADA SFP
 - Common I/O infrastructure for Raspberry PI and BeagleBone Black
 - Same binary runs on both

**The 4DIAC Team likes to say
thank you!**



**Many thanks to all
*bug reporters,
feature requesters,
patch submitters,
and discussions in the forum***

- Bug-list / feature-requests as starting point for involvement
- Source code provided in distributed version control system “Mercurial”
 - 4DIAC-IDE: <http://sourceforge.net/p/fordiac/fordiac-ide/>
 - FORTE: <http://sourceforge.net/p/fordiac/forte/>
 - 4DIAC-LIB: <http://sourceforge.net/p/fordiac/fordiac-lib/>
 - 4DIAC-Systems: <http://sourceforge.net/p/fordiac/fordiac-systems/>
- Patches of collaborators will be reviewed and applied