

1st PLC Based Control Systems WORKSHOP

E. Blanco Viñuela
J. Ortolá Vidal, B. Fernandez Adiego

CERN

16th International Conference on Accelerator
and Large Experimental Physics Control Systems

Goals

- To create a **COLLABORATIVE space** where attendees will exchange:
 - best practices
 - methods and tools employed
 - return of experiencewhen engineering PLC based control systems.
- Foster **collaborations** and/or identifying **expertise** among institutes



Main workshop subject

- Engineering Lifecycle of a PLC based application



Challenges



- PLC based applications life spans for **more than 15 years** in most of the cases. **Development and maintenance** of those applications is a complex task, as usually the applications do not follow any structure but the automation engineer own implementation. Is standardization a real need? Do the control frameworks give any help on this?
- **Testing** industrial applications is a time consuming task and usually an imperfect exercise. Compromises must be found to the test coverage (e.g. difficult offline tests). Formal verification is emerging as a complementary approach. What is the best method to test an application?
- Deploying applications must be tracked and the **software components** deployed must be easily **traceable**. In case of an issue in a delivered component in a project, a efficient identification of the affected PLCs should be straight forward. Are you in measure to identify this effectively?
- **Handling cents of applications** becomes a difficult task. Online **modifications** are required along the life of control systems and the management of such changes must be addressed. How engineers handle the follow up of changes with respect to initial specifications? How a standby service could know the right application to download to a PLC without the expert assistance?

Tracks



Specifications

- Requirement formalization
- Best practices
- Documentation

Development

- Standards and/or Frameworks
- Language choice, code guidelines
- Novel approaches: Code generation, Ext. engineering, OO, DSLs

Testing

- Methodologies (FAT, SAT)
- Simulation, virtual commissioning
- Advanced: Static Analysis, Formal verification

Management

- Versioning
- Deployment
- Management of change

Agenda

- Workshop [agenda](#).



ICALEPCS 2017 Workshop: PLC based control systems

7 October 2017
Barcelona (Spain)
Europe/Zurich timezone

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Overview
Scientific Programme
Timetable
Contribution List
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Registration

Timetable

Sat 07/10

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09:00	Welcome. Barcelona (Spain)	09:00 - 09:10
	Introduction Barcelona (Spain)	09:10 - 09:20
	Presentation of Institutes Dr. Enrique Blanco Vinuela	

Support

- Workshop webpage: <https://indico.cern.ch/event/385144>
 - Scientific program
 - Contributions
 - Agenda



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