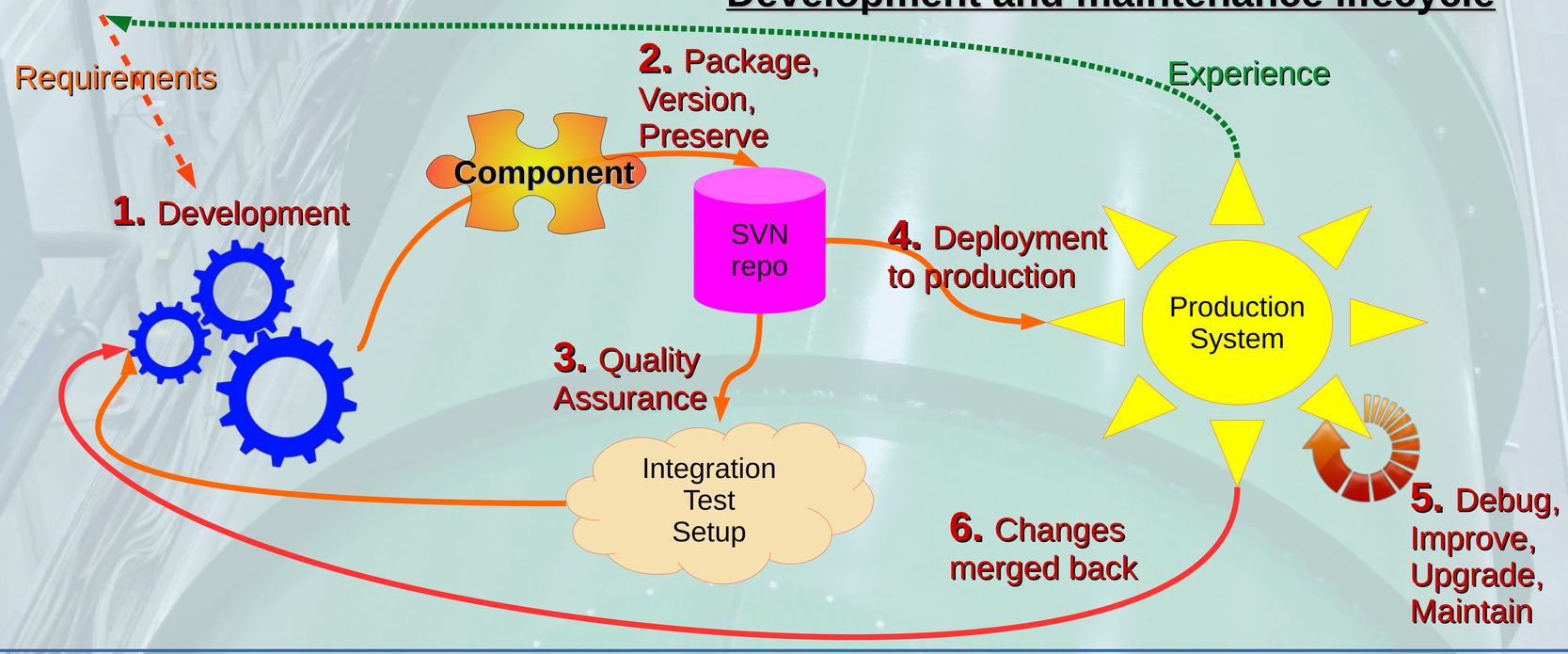
Detector and Run Control Systems for the NA62 Fixed-Target Experiment at CERN

Piotr Golonka[1,5], Valeri Falaleev[2], Riccardo Fantechi[1], Manuel Gonzalez-Berges[1], Nicolas Lurkin[3], Ryan Frank Page[4], Fernando Varela[1]

NA62 Detector Control and Run Control Systems
- operated and developed separately, with very limited resources
- same approach, technologies and infrastructure
- smaller than LHC experiments, yet not less complex
- policy: maximize the use of existing supported technologies, services and infrastructure

Development and maintenance lifecycle



Challenges:

- Requirements
  - Often incomplete or impossible to formalize
  - Evolving very dynamically, to accommodate changes in controlled hardware
  - Sometimes leading to major redesigns
  - Only come with experience of operation
- Hardware
  - Available late
  - Non-standard items
  - Frontend software layer often unstable
- Planing and resources
  - Requests expressed shortly before hardware commissioning, or during the run
  - High turn-over of developers, steep learning curve, long training period
- Drawing proper balance between often very ambitious requirements and available resources

Conclusion and outlook

- Control systems delivered for the first runs with beam in 2014 and 2015
- Reuse of standard technologies and solutions with component-based development allowed to build large parts of the system with minimal effort
- Maintenance and development need to be assured throughout the lifetime of the experiment
- Diagnostic and expert tools as well as overall homogeneous UI experience need further improvement.

[1] CERN, Geneva, Switzerland
[2] JINR, Dubna, Russia,
[3] Univeristy of Birmingham, Birmingham, UK
[4] University of Bristol, Bristol, UK
[5] email: Piotr.Golonka@CERN.CH

Poster: MOPGF020
Track: "Experiment Control"