

1st Accelerators Technology Sector Workshop

Engineering Design Tools and Processes
Project Management Methodologies and Tools

Chair: Mike Lamont

Interconnecting knowledge, experience, methods,
people & data to foster learning & collaboration



ATS
Accelerators and
Technology Sector

Project Management Methodologies and Tools – PM2

Giovanna Vandoni

Thibaut Lefevre



ATS
Accelerators and
Technology Sector

**Defining and executing cryogenic systems for Dune by
Caroline**

**Establishing project management workflows for cooling
and ventilation projects by Zohra**

**Creating high quality durable, efficient code : the software
development workflow by Gabriele**

**Managing beamline configuration in the experimental
areas by Giulia**

Summary of Project Management Methodologies and Tools, part 2

- ❖ **Large diversity of activities and methodologies**
- ❖ **Highlight the broad range of expertise currently at work in ATS**
- ❖ **Highlight the different environments we are working with (>60 years old acc. complex)**
- ❖ **Do we have the tools we need to execute your work well ?**
- ❖ **What could be improved to make our life easier or our work better or both ?**
- ❖ **More integrated tool and stronger collaborative approach.**
 - ❖ **Relevance of sector wide initiative to improve global efficient and team work**

Summary of Project Management Methodologies and Tools, part 2

- ❖ **Towards a single database for everything, is it desirable, feasible and how can we move forward ?**
- ❖ **Automated processes to ease information sharing and optimize design, manufacturing and operation**

Would MADX++ be able to produce a complete PBS ?

Would we extract from PBS realistic functional specifications for equipment groups ?

Would digital twins include full system, i.e mechanic, electronic and software ?

...



PM Methodologies and Tools

Some of the methodologies we saw tackle a part of the PM knowledge, but miss others. None contains all the necessary practices.

PM practice from one community remains restricted to that community – how to seed one practice into another community?

Should CERN have a PM office like other institutes do, which studies and propagates PM practice and unifies standards, QA, monitoring tools, processes?

Multidisciplinary teams – transverse competences – common PM language

Are we capable of managing **Change** in our system engineering tools and integrate the technology evolution in these? How do we manage change in platforms, applications, etc, over a timescale of the next generation project? My 2-cents: we can, whenever our personnel is already highly skilled in technologies (and therefore in system engineering): see PLM. Less, when the starting skills are elsewhere: see CET, EDH, APT.



PM Methodologies and Tools

PM requires an important workforce, depending on the level of implementation of its tools which is required. We see for instance how risk is analysed but not integrated, in our flagship project. We know that we won't be able to manage the next generation, next-scale project in the same way.

Which is the right balance between the PM resources (and their cost) and the benefits for a project ?



EVM and its issues

EVM and its issues. Common issues in how much the project engineers adhere to it, collaborate in it, compared with the data maintenance workload. Shouldn't we have a forum, maybe inside the openSE frame, to discuss these issues and share experience and methods ?

How many of you active in PM are following the openSE forum, is it adapted ? should it be revived and how ? Today, it's based on presentations by external intervenants... but internally to CERN, we would have a lot to share.

Commercial tools in Enterprise software and applications, versus CERN developed ones.

What is the advantage of CERN developed tools?