

Panel 6: Other Ideas?



Different stages have different actors.

In the TONS it is the operator, in an SVF it is the OBSW.

For the TONS the world should center around the MGS, in the SVF the center of the world is the CPU

→ Textual specifications
to HBE: no link / paper
→ A mechanical engineer
does not understand a
formal design
→ use UML please!

Launch and maintain
a Web Page for SMP
(check the one of FYLI)

WORKSHOP ROOM OF PEOPLE
ACROSS DOMAINS / MISSIONS/
COMPANIES TO REACH A COMMON
SET OF NEEDS FOR REUSING
AND COMMUNICATION TOOLS/
SYSTEMS.

Key: From System Design
2 Model Design

⇒ Conf. + Parameterization shall
be standardized

⇒ Not another Scheduler!

Create a user friendly
"playground" for lower
development and demonstration

Compatibility with FRI
standard & active
participation to FRI standard
Center for including Space & It

Too many documentations
→ difficult to spin-in
and "play around"
→ afraid of failure / mistakes

I THINK THAT CURRENT
PLATFORMS ARE TRYING
TO REINVENT THE WHEEL
WHICH WAS DISCOVERED
BY NET SPACE (E-COMMERCE)
COMMUNITY

OPEN SOURCE IS
NOT ANOVELTY
ITS A MUST

THE PLUGABLE ARCHITECTURE
WITH COMMON API
AND STANDARD PROTOCOL
ARE LONG WELL MATURED
SOLUTIONS AMONG
THE BIGGEST IT COMPANIES

LIKE GOOGLE, FACEBOOK
AMAZON, ALLEGRO.

CHECK OUT SOA AND
MICROSERVICES ARCHITECTURE
WHICH ARE CURRENT TRENDS

support cheaper
development languages
Python
Java

SaaS MODEL FOR
TESTING AND SIMULATION
BASED ON SUBSCRIPTIONS

MICROSERVICES
ALLOWS TO WRITE
IN DIFFERENT LANGUAGES
(JAVA, C++, PYTHON...)

THE BEST WAY
... TO MAKE THE DISCREET

MAKE COMMON ARCHITECTURE
WITH WELL DEFINED BUILDING
BLOCKS AND OPEN API

YOU'LL BE ABLE TO
SWAP COMPONENTS
FOR OPEN SOURCE
OR COMMERCIAL PLUGIN

OPEN SOURCE PLUGIN
IMPLEMENTATION
WITH POSSIBILITY TO
EXCHANGE WITH VENDOR
COMMERCIAL ONES

Too late for Ariane 6

ENHANCE KNOWLEDGE
MGMT. METHODOLOGIES TO
IMPROVE MUTUAL SHARING
AND DEVELOPMENTS.

Knowledge Management
thanks Open Source,
Wiki, social
network...

A sort of Big Bang is
foreseen at short term
with AI. Shall we take
it into account in
RATIO-Sim?

EXPECTATIONS:
CAN SCOS BE
SEEN AS A TEST CASE
FOR THE CHANCES
OF SUCCESSFUL
RATIONALIZATION?

LESSONS LEARNED
FROM OTHER INDUSTRIES
AUTOMOTIVE
AEROSPACE

EGS-CC lessons learnt
start small
make it works
enhance it

Integrate Universities
in Working Group

World wide
Open source
(ask Eclipse Foundation)

Collaboration
with NASA

Failure
injection
(a topic per se)

Multi-Physics
Modelling?

Open to other
stakeholders
(Defense, Nuclear industry
Banks...)

Lessons learned and involvement of participants:

- Ask other industries outside space domain (automotive, aeronautic, nuclear, banks)
- Collaboration with NASA
- Include universities to the working groups
- EGS-CC: start small - make it working - enhance it!
- Lessons learned from SCOS: "can SCOS be seen as a test case for the chances of successful rationalization?"
- Lessons learned from MBSE: "no UML please", "a mechanical engineer does not understand a formal design"
- Bring people of several domains/missions/companies together and collect a common set of needs for reusing and communication tools/systems
- Open Source is a MUST
- Different simulations have different "users"/"actors" : In the TOMS it is the operator, in an SVF it is the OBSW. "For the TOMS the world should center around the MCS, in the SVF the center is the CPU"
- Support cheaper development languages (Python, Java)
- Enhance knowledge management methodologies to improve mutual sharing and developments
- Service Oriented Architecture (SOA)
- Microservice architecture

Potential topics:

- Failure injection
- Artificial Intelligence (AI)
- Flight experience shall be re-injected to the simulation models to improve simulation (mission does not stop at LEOP)
- Multi-Physics modelling
- Simple modelling and simulation application as "playground" for development, demonstration and training

Standardisation:

- Compatibility with FMI
- Configuration and Parameterization should be standardized (from system design to model design)
- Better documentation of standards:
- Current documentation too complex (too difficult to "spin-in" and "play around")
- Knowledge management (see open source, Wiki, Social networks)
- Webpage for SMP similar to existing FMI pages