Federation Development and Execution Process (FEDEP)
Product Development Group (PDG)

Second PDG kick-off meeting (Euro SIW 07, Santa Margherita Ligure, (Genoa) Italy)
20 June 2007

1. Organization

Agenda:
- Introduction (Bob Lutz)
- FEDEP Background/History (Bob Lutz)
- BPDSP Overview (Bob Lutz)
- Rationale/Issues (Bob Lutz)
- Schedule (Bob Lutz)
- RTP 11.13 Overview (Keith Ford)
- SEDEP/FEDEP Discussions (Keith Ford)
- Wrap-up (Bob Lutz)

Audience:
The meeting was well attended with respect to the Euro SIW general attendance. Around 20 people registered to the meeting and the average audience was about 15 (see list in Annex). The level of participation and discussion was high.

Presentations:
Presentations used to support the meeting will be available on the SISO web site (FEDEP-PDG Discussions, View Files).

2. Introduction (Bob Lutz)

This was the second kick-off meeting of the PDG. A separate kick-off meeting was held in March 07 during the Spring SIW. The purpose of holding a second kick-off meeting in Europe was to involve the European community in this PDG.

The stated goals of the meeting were to:
- Make the PDG aware of the issues regarding the FEDEP
- Review the development schedule
- Share information on EUCLID RTP 11.13 / SEDEP.
- Compare and contrast FEDEP and SEDEP.

The chairman stated the objective of the targeted product:
"The FEDEP is a generalized systems engineering process for building and executing HLA federations and other distributed simulation applications. It is intended as a high-level process framework into which lower-level systems engineering practices native to each individual application area can be easily integrated. The FEDEP is not intended to be prescriptive, but rather defines a generic, common sense development methodology that can and should be tailored to meet the needs of individual user applications.

The FEDEP was approved as an IEEE Recommended Practice (IEEE 1516.3) in April 2003. The IEEE will soon require that the FEDEP be revised, reaffirmed, or withdrawn."

The question was raised about the evidence of the existence of "non-HLA" federations using the existing FEDEP. None were identified. The discussion revealed the existence of many projects that are mixing different interoperability standards. An agreement was reached that the FEDEP should address mixed-architecture federations.

The final part of this presentation covered the schedule of former document developments as references for the new PDG (US DoD FEDEP (1998) and IEEE 1516.3 version, completed in 2003).

3. Presentation of the SISO Balloted Product Development and Support Process (BPDSP) (Bob Lutz)

This presentation introduced the official product development and maintenance process of SISO. Highlighted in this presentation was the relationship between the SISO Standard development process and the IEEE Standard process. The general rules related to copyrighted material and protection intellectual property rights as prescribed by SISO and IEEE were also covered. The BPDSP is an evolving reference document built upon lessons learned from previous standardization activities. The current BPDSP is dated 2005 but a new version could be published by the end of 2007.

4. Rationale/Issues (Bob LUTZ)

Bob Lutz introduced the rationale to move to a new enlarged scope for the DSEEP. After first meeting, email-based discussions resulting in an apparent consensus move to an even more generic process. The future product would not be exclusively related to the HLA interoperability standard but could be applied to all distributed simulation projects regardless of the protocols or standards they use.

The PDG discussed the structure of the document. There is a general consensus on the fact that the new guidance document should be composed of:

- A core document describing the general process,
- Specific annexes related to different standards (such as DIS, HLA) or products (such as TENA).

Bob LUTZ has already produced a draft DSEEP core document derived from the previous FEDEP (IEEE 1516.3). It has been distributed to the FEDEP PDG community and will be provided to the PDG for comment until 25 July 2007.

Annexes should be released as separate documents. A question was raised about the development of these Annexes: what, when, who, how? Bob LUTZ expressed his opinion that they should be developed by "tiger teams". It seems sensible that each annex shall be supported by the

corresponding community. The DIS PDGs has already been approached on this point via teleconferencing.

Regarding TENA, Roy SCRUDDER expressed his feeling that since this product has been made fully available to the international community it should be the subject of an annex. Jean-Louis IGARZA expressed an opinion that TENA is not in large use in Europe because many industry companies do not accept to build a project on a technology which is not an officially-approved standard objecting that it could provoke issues on its persistence. Some previous poor experiences have provoked a general reluctance to the use of non-approved standards. The TENA community has been approached many times to move to an open standardization process but never accepted doing so. Nevertheless that should not prevent the TENA community to draft an annexe if it fits their business model.

The issue was raised on the format/content of Annexes. Mark McCALL suggested that the first annexe produced could be the HLA-related Annexe since it should be easily derived from the already existing HLA IEEE 1516.3 document. Then it could be used as a model for other annexes. Katherine MORSE indicated this was consistent with the IEEE model for producing standards.

The option of changing the name of the FEDEP was discussed. After the first PDG meeting, an electronic straw poll was held, and a new name has been selected-- "Distributed Simulation Engineering and Execution Process" (DSEEP, pronounced "DEE-seep"). There were no objections at this PDG meeting.

5. Schedule (Bob LUTZ)

The chairman introduced the foreseen schedule. The expected duration of the PDG should be 2.5 years. This forecast was generally judged as realistic with the caveat that, in case of a decision to go to IEEE, there is a requirement that the related PAR (Project Authorization Request to IEEE) be accepted before starting the first round of comments.

Action Item (Katherine MORSE): Confirm with IEEE that is okay to distribute the current draft document and start a comment round prior to IEEE PAR approval.

6. RTP 11.13 Overview (Keith FORD)

Keith FORD introduced the European project EUCLID CEPA 11 RTP 11.13 completed in 2003 and led by his company (Thales). This project produced a generic engineering process named SEDEP (Synthetic Environment[1] Development and Exploitation Process) which is similar to the FEDEP, but has some differences. Participants from the SEDEP project participated in the development of the previous IEEE 1516 FEDEP version.
Keith described the history of the SEDEP project and provided a quick overview. One of the most visible differences between both processes is the Step 0 of SEDEP "Analysis of User needs". This step could be included in the DSEEP step 1 (to be discussed further).

The speaker underlined some other specific features of SEDEP such as:

[1] Synthetic Environment here refers to the distributed simulated "mission space" and not to the simulated natural environment as in the SEDRIS ISO standard

- The iterative use of SEDEP,
- The interest of the SEDEP browser version (still available on the RTP11.13 website).

Some specific discussion took place on the place and definitions of scenarios. The main part of the presentation supported a comparison between both processes step by step. This comparison is covered in Mr. FORD's briefing, which can be found on the SISO reflector.

A summary of the main differences between both processes is the inclusion in SEDEP of:

- Library descriptions,
- Support tools (which are not specific products rather "classes of tools"),
- Best practices,
- Checklists.

Since its publication, the SEDEP has been audited by an independent team from the British industry (composed from Thales, MBDA and BAE Systems). Some recommendations have been made for SEDEP evolution. Mr. Neil SMITH emphasized the importance of taking into account the simulation context. He also reminded the group that there is a NATO M&S Group (NMSG) Task Group, MSG-052 "Knowledge Network for Federation Design Guidelines," which is the official NATO point of contact for the FEDEP standardization activity and should provide significant input to the PDG. The chairman of this Task Group is Gunnar ÖLHUND (FMV, Sweden).

An independent UK Ministry of Defense assessment of the SEPEP recommended the addition of a maturity model and using the SEDEP as an overlay to the FEDEP.

Future ownership of the SEDEP remains an issue, with options including a single nation (e.g., UK MoD), NATO (possibly MSG-052), or SISO.

Bjorn MOLLER (Pitch, SWE) stressed the value of templates, checklists, and a guide to implementation, but stated they could be separate from the standard.

The idea of the Product Support Group for the DSEEP maintaining a catalogue of tools was discussed. The proposed model was for the PSG to serve as the moderator and tool producers to provide inputs.

A discussion was held on whether the DSEEP should the address of preparing initialization data for a federation. No decision was made regarding the inclusion of such information.

The addition of a "Dummies Guide" for the DSEEP was discussed, but the consensus was this should not be part of the specification.

7. SEDEP/FEDEP Discussions (Keith FORD)

The discussion was mainly based on the last 4 slides of the presentation. In conclusion, Keith FORD delivered the following messages and recommendations:

- The SEDEP should provide a useful input to the DSEEP,

- There is no room for two generic processes: FEDEP moving to the more generic DSEEP process should become the authoritative reference,
- All useful features of SEDEP should be merged within DSEEP,
- An early step needs to be added in the DSEEP to address whether distributed or standalone simulation is the best solution,
- Not all of the SEDEP details are appropriate for the DSEEP,
- So … "arriverdeci" SEDEP!

8. Choice of the final Standards Development Organization (IEEE versus SISO)

This issue was raised by Jean-Louis IGARZA speaking on behalf of the NATO Modelling and Simulation Group. Recently, the issue of SISO standards being established as IEEE balloted products was raised by some NMSG key nations. There is some NMSG reluctance when the original products were produced by NMSG Task Groups or with some NATO support. In addition NATO and SISO are about to sign a Technical Cooperation Agreement (TCA) which allows the inclusion of SISO products in NATO Standard Agreements (STANAGs) just like IEEE or ISO products. Mr. IGARZA recommended that SISO carefully consider maintaining and producing standards as SISO products, and not default to producing IEEE products.
The option of standardizing DSEEP as a guidance product under the SISO control, and not to ballotting it under IEEE, is the preference of many NATO nations, but it raises legal concern. The DSEEP will be primarily derived from the former IEEE 1516.3 document and will reuse a significant portion of the previous text. SAC will investigate this legal issue more in depth and the final decision will be taken after an electronic vote to occur in Fall 07.

9. Wrap-up (Bob Lutz)

The chairman summarized the main facts of the meeting and adjourned the meeting.

Annexe: List of participants

- Jeff ABBOTT (Acusoft)
- Kobi AURAHEIM (I MOD)
- Grant BAILEY (UK MOD)
- Curzio BATINI (ELSAG)
- Mark DUMBLE (Aegis)
- Keith FORD (Thales D3S)
- Jean-Louis IGARZA (French MoD, DGA)
- Toshinao ISHU (Mitsubishi)
- Eric LESTRADE (French MoD, DGA)
- Reed LITTLE (CMU/SEI)
- Bob LUTZ (JHU/APL)
- Mark McCALL (Gen Dyn)
- Bjorn MOLLER (Pitch)
- Yosi RAIKO (Israel Def)
- Chris ROUGET (Preforce)
- Roy SCRUDDER (US DoD M&S CO)
- Mike SIMPSON (UK MOD)
- Neil SMITH (Dstl UK)
- Rob WITTMAN (Mitre)