IEEE Draft Discussion

Dr. Judith Dahmann, DMSO

Background and Purpose

- **Background**
  - **At AMG25**
    - **Reviewed issues raised with Draft1 of the IEEE draft HLA standard (1516) and WG recommendations**
    - **Supported the recommended WG actions**
  - **At AMG26**
    - **Reviewed Draft2 of the IEEE draft 1516 and outstanding issues**
    - **Endorsed Draft2 and supported recommended actions to submit comments on Draft2**
  - **At AMG27**
    - **Reviewed the results of the Draft2 WG process, plans for Draft3, and outstanding issues**
    - **Supported recommended actions/comments**
- **Purpose**
  - **Review results of the Draft 3 WG process and subsequent plans**
  - **Review outstanding issues and proposed actions**

IEEE 1516 Progress

- **Draft 3**
  - **released 16 November**
  - **comment period 16 November - 7 December**
  - **contains all AMG recommended changes**
- **WG comment telecons 3rd week in December**
  - **drafting teams & assigned reviewers**
  - **discuss recommended responses to comments**
- **Next WG meeting is 5 - 7 January**
  - **SPAWAR, San Diego**
- **Resulting Draft 4 will either**
  - **go forward for balloting, or**
  - **begin another comment cycle**

Review of AMG27 Outstanding Issues

- **As discussed at AMG27**
  - **Several AMG comments accepted by IEEE HLA WG and now incorporated into Draft 3**
    - **User supplied time**
    - **Unique object instance handles**
    - **OMT tables and data typing**
  - **With the issuance of Draft 3, there were a set of issues still to be addressed**
    - **XML usage**
    - **Federate failure notification**
    - **Multiple routing spaces**
- **In following slides, issues are reviewed and current status is described**
  - **Each issue is discussed in terms of the user need, background on AMG experience with the issues, and recommended actions**

XML to Support HLA DIFs

- **From AMG27:**
  - *Background*
    - *HLA DIFs (OMT, FED) need to be updated to reflect changes in specifications (e.g. OMT tables)*
    - *With the spec review for standardization, option for use of an industry standard to support HLA DIFs was considered*
  - *Current HLA DIF specification uses BNF*
    - *Offers a great deal of flexibility*
    - *Well suited to early development phase*
    - *Allows/requires user to customize 'grammar' to particular needs of application*
  - *XML (eXtensible Markup Language) provides an industry standard option to support HLA DIFs*
    - *We are beyond development phase with HLA DIFs; good time to consider standard approaches*
  - *Assessment was conducted to evaluate advisability of XML to support HLA DIFs*
    - *Technically*
    - *Business case perspective*

XML to Support HLA DIF - Status

- **Draft 3 did not include an updated DIF**
- **AMG27 concurred with recommendation to propose use of XML for DIF**
- **Drafted XML DTD and submitted as a Draft3 comment**
  - **Reviewed our draft DTD and implementation with industry 'experts'**
  - **Unified HLA OMT and FED into single XML DTD**
- **Technical exchange on XML is scheduled for this AMG**
  - **XML in general**
  - **XML application to HLA DIF**
  - **Discussion of experiments**

Federation Execution Failure Model

- **AMG26 discussion**
  - *Issue*
    - *Execution managers have difficulties determining the status of participating federates in the presence of certain failures*
    - *Internally the RTI is aware of failures on the part of participating federates and it is desireable for this information to be made available to federates*
  - *Recommendation*
    - *Add federate status information to the MOM*
    - *Perform additional research on a standard Federation Execution Failure Model (what does 'failure' mean under different RTI development strategies)*
  - *Action*
    - *Submit comment to IEEE SDG*
- **Still pending as of AMG 27 due to ambiguity of proposed action**
- **Recommendation that no action be taken at this point**

Multiple Routing Spaces - History

- **AMG26 discussion**
  - *Issue*
    - *RPR-FOM group has asked that a given class attribute/interaction class be allowed to have multiple routing spaces assigned to it.*
  - *AMG/HLA Experience/Assessment*
    - *DDM assessment during review of STOW experience suggested that the current routing space flexibility supported the range of anticipated uses and can be implemented efficiently*
  - *Recommendation*
    - *No change to Spec at this time*
  - *Action*
    - *Investigate with actual users (Perceptronics and LADS) the extent to which there may be real limits in the current specification and possible options for addressing these*
      - *Assess how applications are supported with current, thorough experimentation*

- **Investigation was underway as of AMG 27**

Multiple Routing Spaces

- **Update**
  - **Investigation has identified an alternative to current DDM mechanism**
    - **single multi-dimensional routing space**
    - **addresses outstanding issue**
  - **Investigation (based on implementation experience, Perceptronics) of new mechanism complete**
    - **built middle-ware layer implementing new mechanism on top of existing RTI and exercised existing DDM use cases**
  - **New mechanism solves outstanding issue, is viable overall, and "fits" into I/F spec**
    - **has added advantages by protecting existing DDM users from additions to routing dimensions**
- **Status/Recommendation**
  - **Draft 3 comment with detailed description of new mechanism and its impact on all parts of standard was submitted last week to meet SDG deadline pending AMG discussion**
  - **Copies of WG submission available at AMG meeting**
  - **Technical exchange scheduled for 17 December at DMSO**

Next Steps

- **DDM technical exchange to review proposed changes to allow for more DDM flexibility, 17 December at DMSO, 9-3**
  - **Results will be reflected in WG presentation in January**
- **Urge AMG technical participation at the Draft 3 review in San Diego, January 5-7**
- **Urge AMG members and their representations have IEEE memberships active so they can participate in balloting process**
  - **Including membership in Standards Association**