

## WG12 현황

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### 1. WG12에 포함되는 분야

- 통합자원:
  - 기본 통합자원 : Part 41~Part 49
  - 응용 통합자원 : Part 101~Part 107
- AIC : Part 501~520
- Parametrics

### 2. WG12 활동 영역

- Short term issues
  - WG3 and WG12 relationship (integrated resources)
  - Interpretation procedures documents
  - This is being worked through efforts of QC and WG12. Personnel resources are needed for completion.
  - Open SEDS Issues
  - These are being worked as time allows from WG12 experts.
  - Change Management
  - QC Change Management is putting in-place a Change Control Board for Changes to existing and new standards. This will alleviate many of the problems. Details of changes will be worked in WG12.
  - TC Completion
  - Completion of the TCs as a complete set. We have several that are complete and should be issued by the Secretariat soon. Several others should be complete (or require validation) at the Beijing Meeting. The TC dealing with IR changes for Year 2000 is complete and waiting on other TC related items.

- PLIB & MANDATE Common Resources
- Several concerns on how PLIB and MANDATE is to fit into the Common Resources picture. This could go further into how PLIB and MANDATE fits into SC4 Architecture
- Long term issues
  - Integration and the Data Architecture
  - Consistent Interpretation of IRs/AICs
  - Modules relation to Common Resources
    - The short term issue is the Interpretation Procedures Document.
    - The longer term issue is being addressed within WG10 (e.g., Modules SC4 Data Architecture)
    - The other aspect of this is how the SC4 data architecture is influenced by different approaches to the same problem. In other words, having a different approach to the same solution and standardizing both approaches. Long term problem because of the fact that two ways to do the same thing.
  - P/NWI : How to put it into SC4 Structure
  - Oil & Gas
  - 10303-106
  - The efforts of SC4 to approve NWIs without a logical fit into the existing SC4 efforts is being addressed in the QC Change Management Meetings. The QC Change Management meetings appear to become a Change Control Board for SC4 efforts. Progress should be shown at the upcoming meeting.
  - Other ISO Standards
  - Impact on Common Resources

- Harmonization Required
- This is still an issue that needs to be worked. DMAC and TC213 are areas that need additional effort.
- Staffing Levels
- There are becoming fewer and fewer personnel to work the IR related issue with some of the background of the 1st edition of the STEP standard.
- The AIC efforts are waning, but it appears that the Modules efforts are picking up (My view is that Modules are another approach to AICs).

### 3. AIC 분야 활동

- Wireframe : Edge-based, Shell-based, Geometrically bounded 2D, Geometrically bounded
- B-Rep : Faceted, Elementary, Advanced
- CSG
- Surface : Geometrically bounded, Non-manifold, Manifold, Topologically bounded
- Draughting : Annotation, Drawing structure and administration, Elements, Associative elements
- Mechanical design : Context, Geometric representation, Shaded presentation
- Tolerances : Geometric

### 4. 통합자원 분야 활동

- Version 2 preparation
  - Part 41, Part 43, Part 44 : Minor change
  - Part 42 : Minor change and New schema addition
  - Version 2 of Part 41~44 : CD voting 중
  - 현 진행 자료는 SOLIS에 준비되어 있음
- New part preparation
  - Part 106 : Building core model
  - Part 107 : Engineering analysis

### 5. Part 42 변경 내용 요약

- Geometry schema
  - planar\_swept\_surface is introduced
  - polar\_point, spherical\_point and cylindrical\_point

- are added as subtypes of Cartesian\_point
- Topology schema
- Geometric models schema
  - More CSG primitives : ellipsoid, tetrahedron, rectangular pyramid, reducing torus
  - swept\_face\_solid and swept\_area\_solid are introduced
  - Subtypes of geometric\_representation\_item
  - Subtype of solid\_model : brep\_2d
- Mathematical representation schema (New)
  - Requested by engineering analysis society
  - Define a general, flexible, standard way of communicating engineering design and analysis data involving physical fields or configuration spaces of arbitrary dimensionality
  - Specifically, propose an EXPRESS schema containing fundamental entities needed to express mathematical spaces and the mathematical functions between them
  - Mathematical function, value, tuple, and space
  - Array function and matrix

### 6. Parametrics 그룹 활동

- Working Draft
  - Parameterization and constraints for explicit geometric product models
- Scope
  - The association of parameters with dimensions in a product model
  - The definition of allowable ranges for model parameters
  - The definition of mathematical relations between model parameters
  - The specification of geometric constraints between elements of a product model, both in two and three dimensions
- Out of scope
  - The representation of history-based models in terms of sequences of constructional operations
  - Feature-based models
  - Resources specifically for the parameterization

- of non-geometric models.
- 관련 Project 및 Web site
  - ENGEN (Enabling Next Generation Mechanical Design) project: From Nov. 1995  
Homepage: [www.scra.org/engen](http://www.scra.org/engen)
  - OCAI (Open CAD Architecture for Interoperability) project: From Jan. 1997  
Homepage: [www.ocai.org](http://www.ocai.org)
  - QCIM(Quality Management by CIM) project (Germany)

## 7. 결 론

- 통합자원은 AP 등 다른 분야에서의 요구에 따

- 라 지속적인 개정 작업이 이루어지고 새로운 Part가 추가될 것임.
- AIC는 조만간 국제표준화가 완료될 것임(현재 DIS 문서 준비중).
- Parametrics 그룹 활동은 STEP에 수용됨.
- Parametrics는 NWI(New Work Item)으로 등록되어 개발의 속도가 빨라질 전망이다.
- History-based design과 Feature-based design이 Parametrics 그룹에서 수용하지 못하는 것이 가장 큰 문제로 대두될 가능성이 있음.
- 현재 추진중인 문서는 SOLIS WG12에 준비되어 있음.