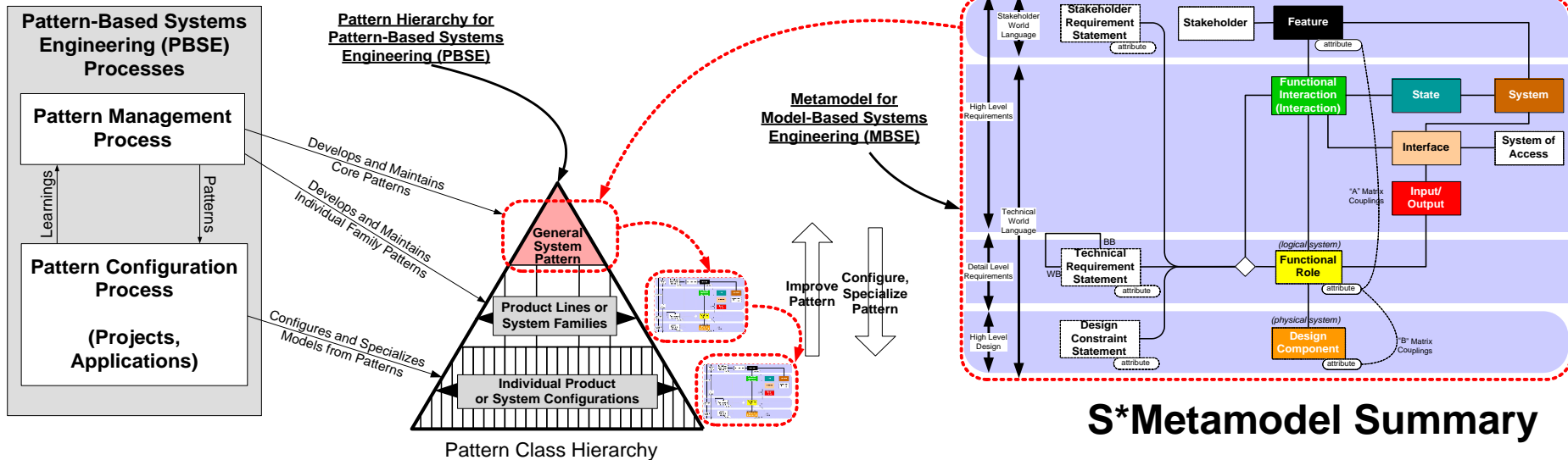


MBSE Patterns Challenge Team

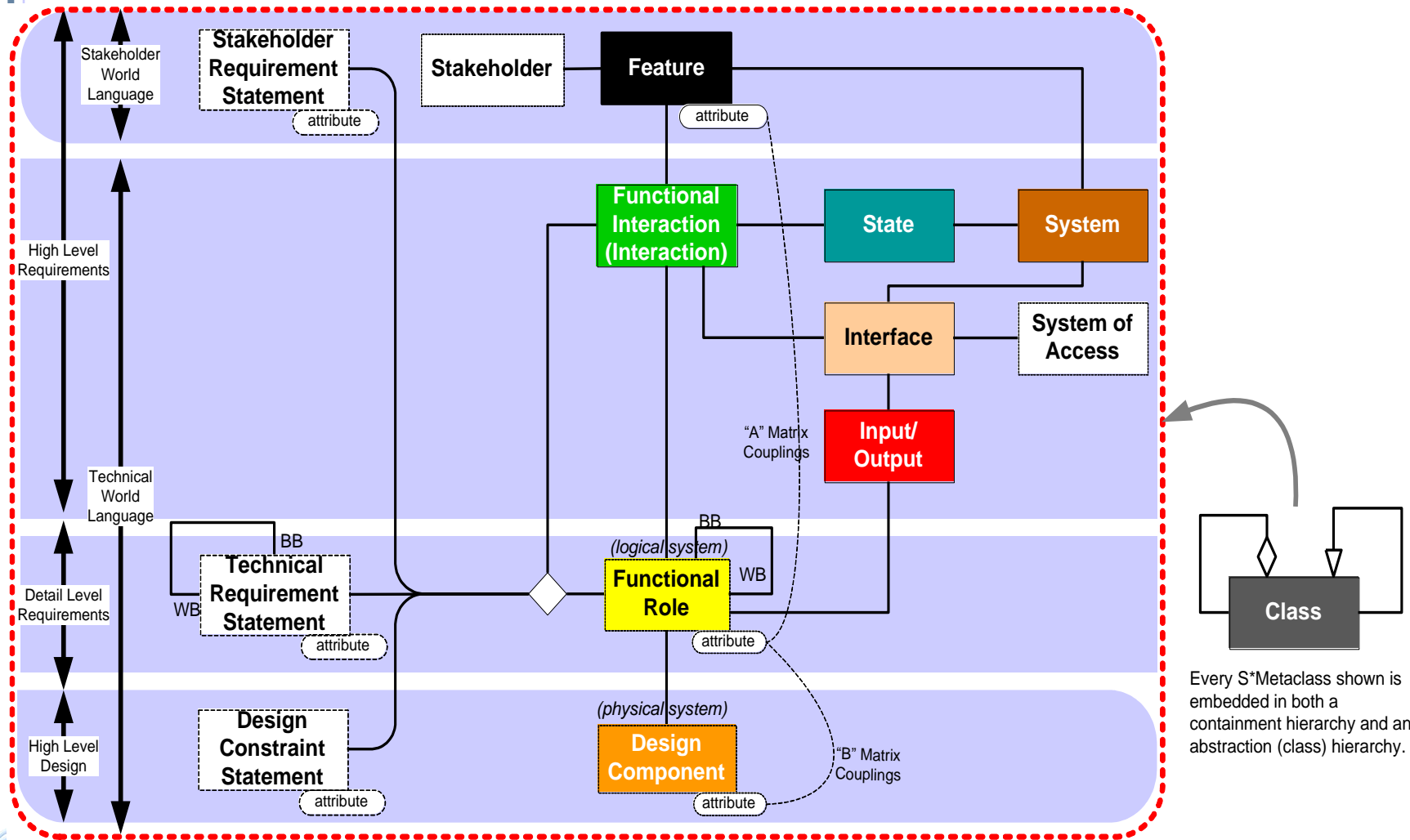


- **S*Patterns** are re-usable, configurable, S*Models.
- **S*Models** are MBSE models satisfying the S*Metamodel.
- **S*Metamodel:** The smallest set of elements necessary for system life cycle purposes of engineering and science (ISO 15288 or otherwise).
- **Modeling language independent:** use SysML, IDEF, or your personal favorite language—but cover the S*Metamodel elements.
- **Tools independent:** mapped to multiple third party COTS modeling tools, PLM systems, and databases.

Team Projects

- Wave 1 Projects (completed in 2014):
 - Using Patterns in Automated Verification of Safety-Critical Systems
 - Patterns for Reducing Error Escapes in Development
 - Life Cycle Patterns Across the Enterprise
 - Automated Vehicle Pattern
 - The Case for a Stronger Foundation Metamodel for MBSE: Parts 1, 2
- Wave 2 Projects (2014-2015): (in progress)
 - Agile Systems Engineering Life Cycle Pattern (Joint with Agile WG)
 - SE Community Social Network Pattern
 - INCOSE Summary of PBSE Methodology
 - The Case for a Stronger Foundation Metamodel for MBSE: Part 3
- Future Projects: (2015-_____)
 - Your interests? Suggest! Question! Join us!
- Co-chairs: Bill Schindel schindel@ictt.com
Troy Peterson peterson_troy@bah.com
- Team web page (in INCOSE/OMG MBSE wiki):
- <http://www.omgwiki.org/MBSE/doku.php?id=mbse:patterns:patterns>

S*Metamodel Summary

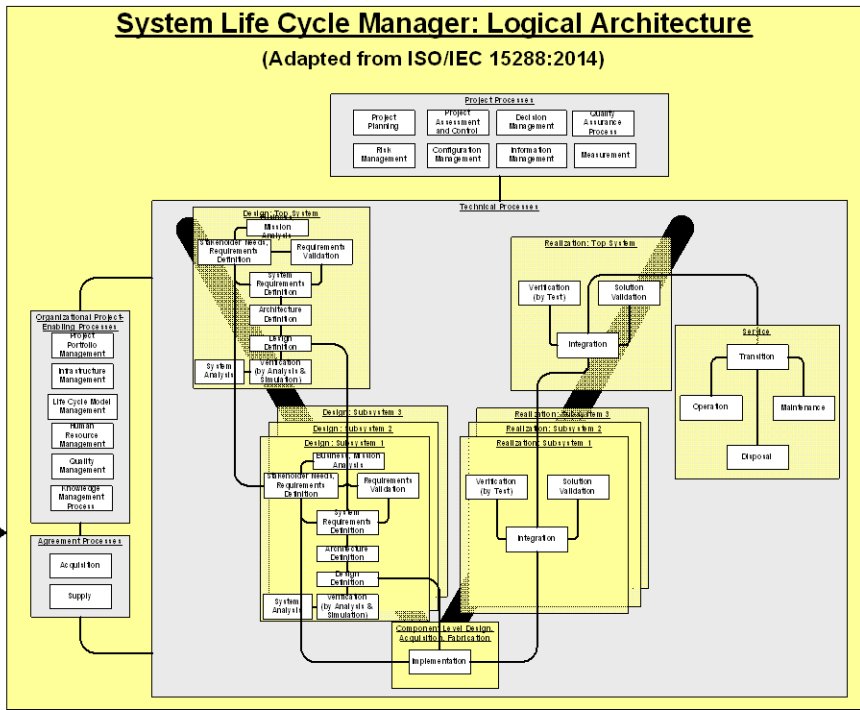


Every S*Metaclass shown is embedded in both a containment hierarchy and an abstraction (class) hierarchy.

Definitions, discussion—see web site

Historical S*Patterns Across Domains

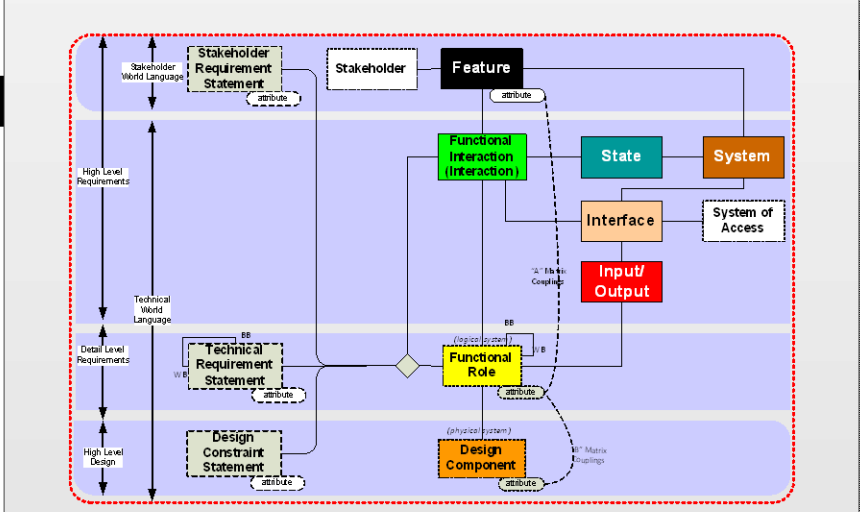
Medical Devices Patterns	Construction Equipment Patterns	Commercial Vehicle Patterns	Space Tourism Pattern
Manufacturing Process Patterns	Vision System Patterns	Packaging Systems Patterns	Lawnmower Product Line Pattern
Embedded Intelligence Patterns	Systems of Innovation (SOI) Pattern	Consumer Packaged Goods Patterns (Multiple)	Orbital Satellite Pattern
Product Service System Patterns	Product Distribution System Patterns	Plant Operations & Maintenance System Patterns	Oil Filter Pattern
Life Cycle Management System Patterns	Production Material Handling Patterns	Engine Controls Patterns	Military Radio Systems Pattern
Agile Systems Engineering Life Cycle Pattern	Transmission Systems Pattern	Precision Parts Production, Sales, and Engineering Pattern	Higher Education Experiential Pattern



Process Compatibility: Patterns include the System Life Cycle Process:

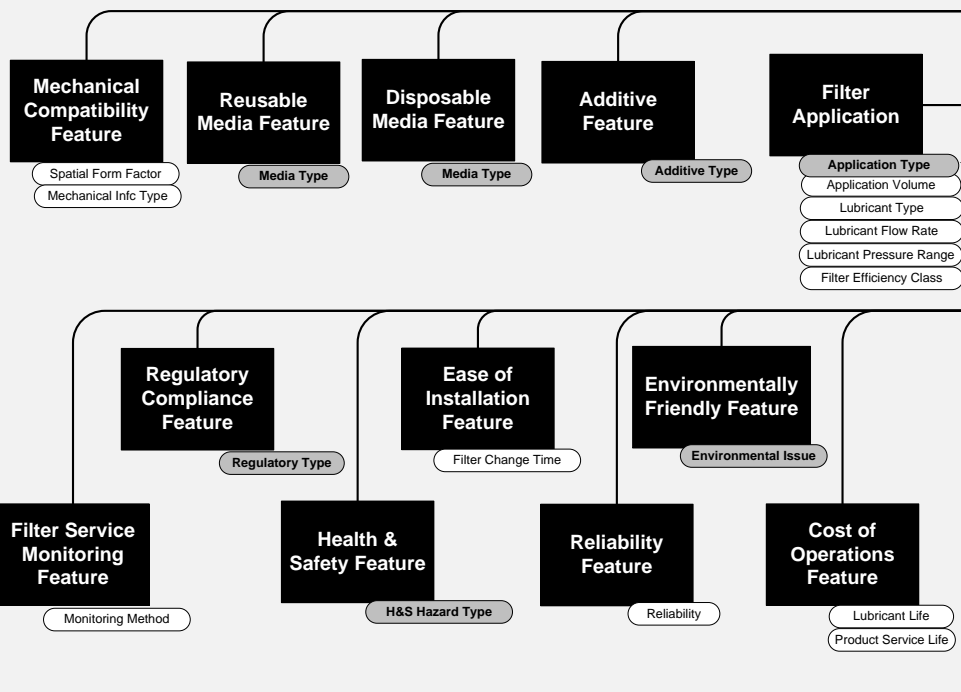
- ISO15288
- Agile Scrum
- Information Systems

Information Passing Through Processes Above

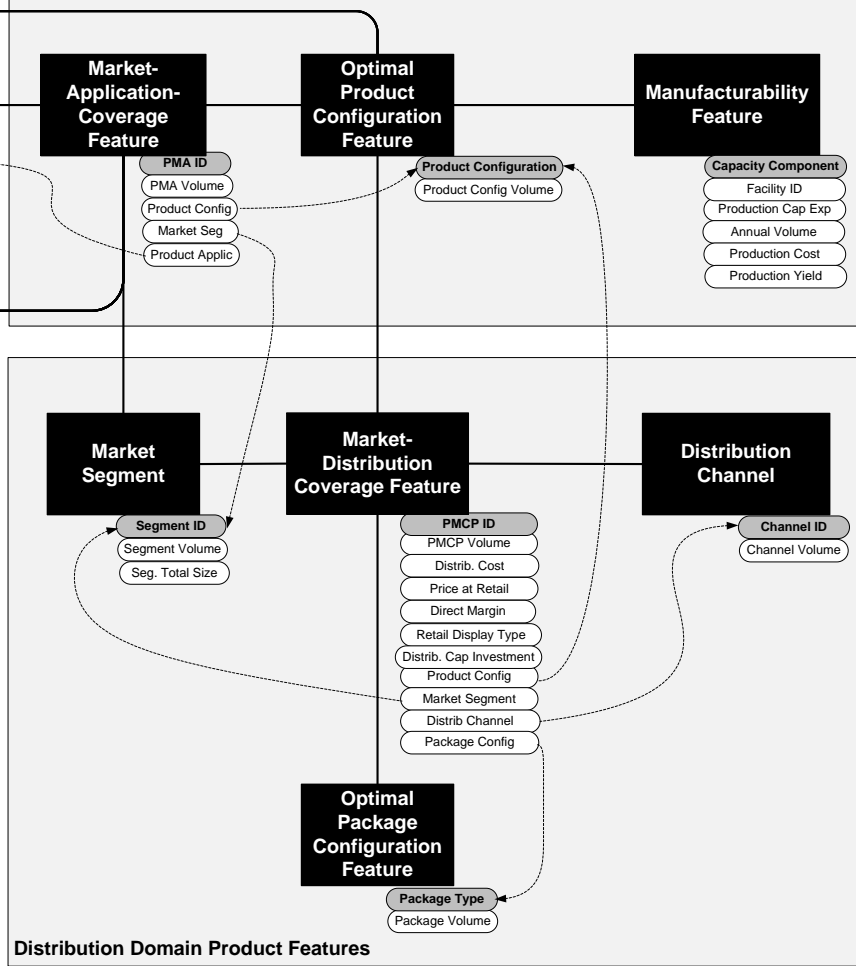


(S*Metamodel Summary)

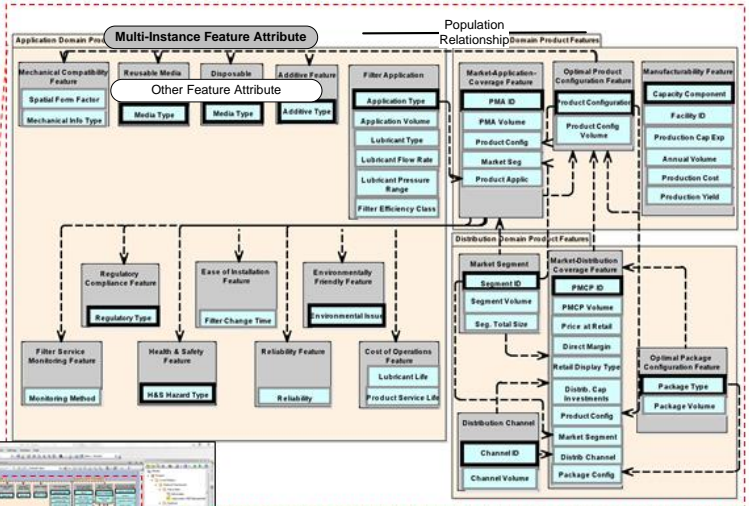
Application Domain Product Features



Manufacturing Domain Product Features



Examples from Enterprise Architect (a SysML Modeling Tool)



Extracts from OM: Oil Filter Pattern Example
 See the team wiki for much more on this.