MBSE Working Group Round Robin
26 January 2020

Drew Stovall, PhD
Chair of Work Products, PLE WG

Product Line Engineering WG

www.incose.org/IW2020
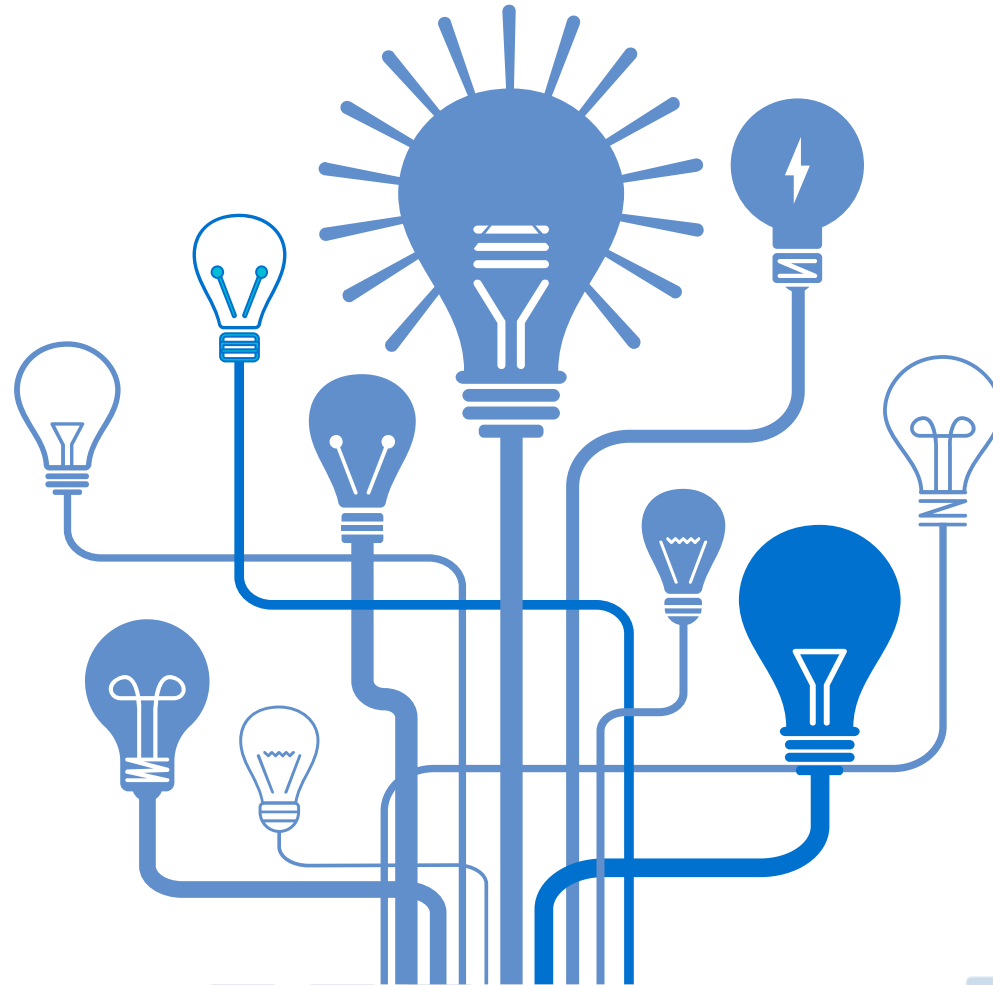
Product Line Engineering

Product Line:

a family of similar

products or systems

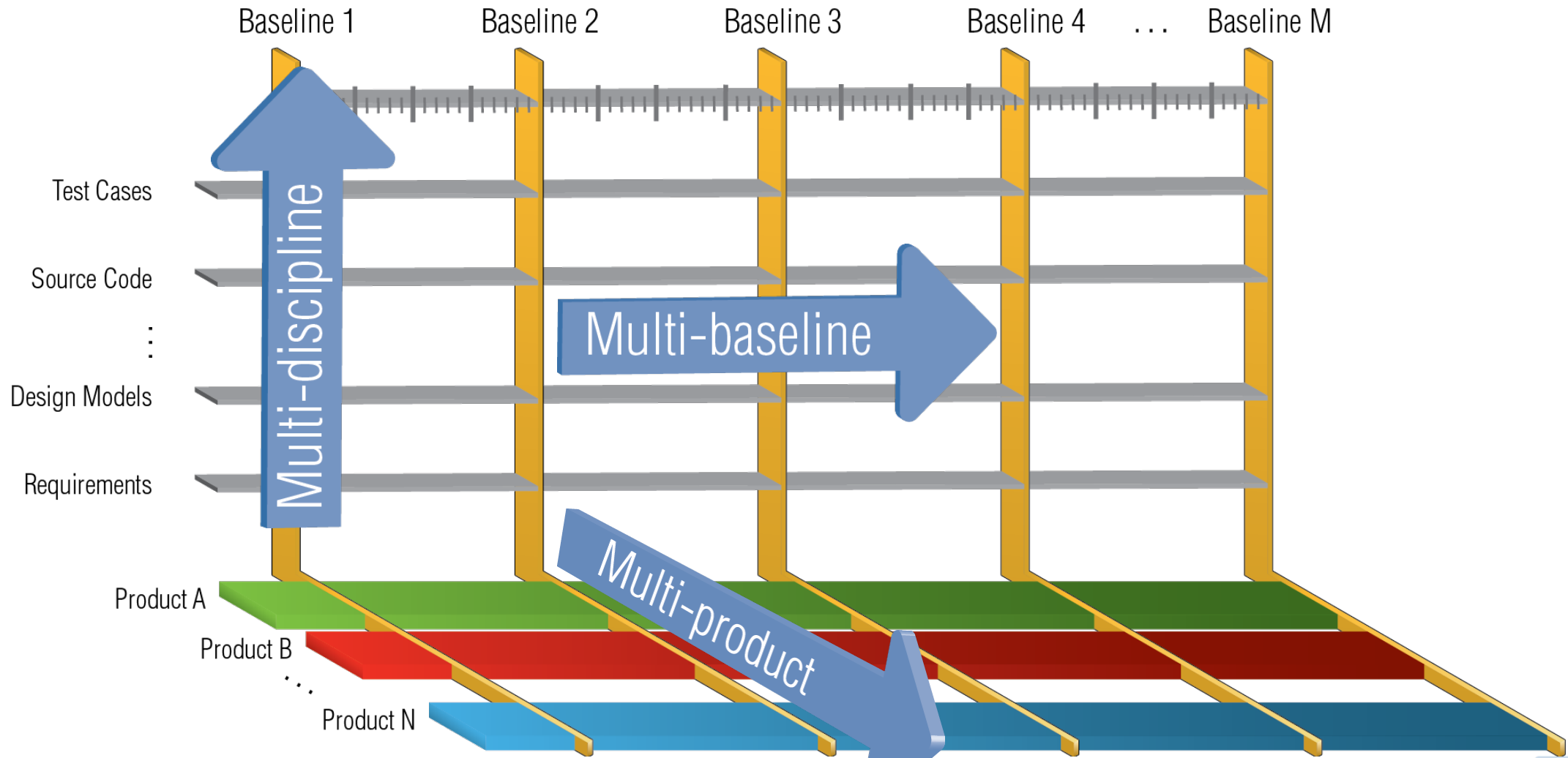with variations

in features and

functions

Product Line Engineering:

engineering of a product line using

a *shared set of engineering assets*,

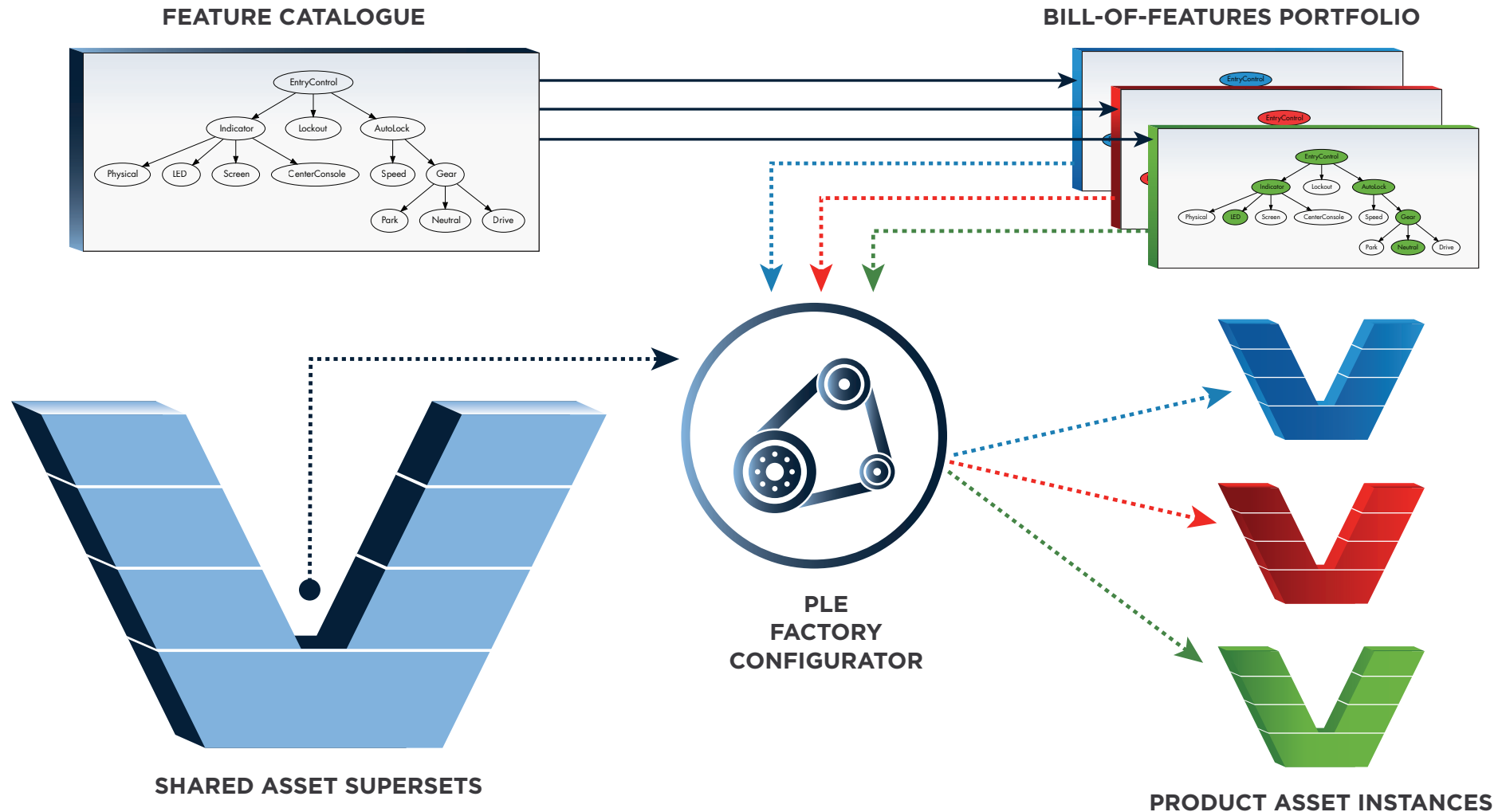a *managed set of features*, and

an *automated means of production*

Separation of Concerns in PLE Solutions

Feature-based Product Line Engineering

FEATURE CATALOGUE

BILL-OF-FEATURES PORTFOLIO

PLE FACTORY CONFIGURATOR

SHARED ASSET SUPERSETS

PRODUCT ASSET INSTANCES

We Do Cool Stuff

- Systems Product Line Engineering Handbook

- INSIGHT August 2019: Product Line Engineering

- INCOSE Feature-Based Product Line Engineering

2018 INCOSE Working Group Award for Sustained Performance

2019 INCOSE Product of the Year
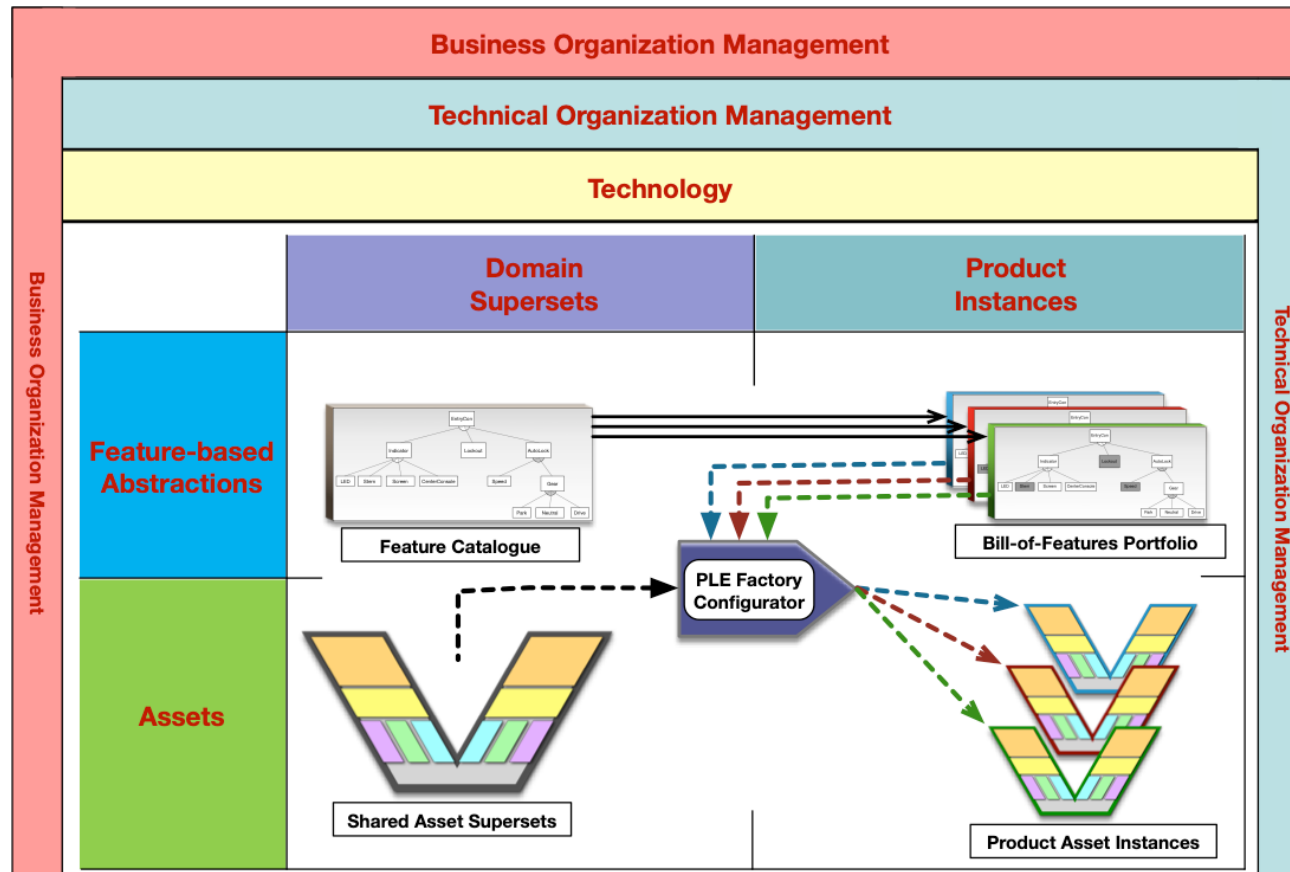
Feature-based Systems and Software Product Line Engineering: A Primer

Feature-based Product Line Engineering lets you build your product line portfolio as a single production system rather than a multitude of individual products.

ISO 26580 - Methods and Tools for the Feature-based Approach to Systems and Software PLE

Cyber Secure and Resilient Approaches for Feature Based Variation Management

INCOSE

Bring SSE to PLE

Year	Month	Activity	Milestones
2018	5 Apr (3-5)	Kickoff	
	11 May (11-12)	Virtual meetings to promote and assess progress	
	8 Jun (11-12)		
	Jul 7-12 (IS)	Present results to SSE/PLE WGs	**IS18:** 7-12 Jul 2018 in Washington, DC
	Sep 14 (11-12)	Virtual meetings to promote and assess progress	
	Oct 5 (11-12)		
	Nov 2 (11-12)		
	Dec 7 (11-12)		
2018	Jan 26 (IW)	Present results to SSE/PLE WGs	IW19: 26-29 Jan 2019 in Torrance, CA
	1 Mar (11-12)	Virtual meetings to promote and assess progress	
	5 Apr (11-12)		
	3 May (11-12)		
	Jun		
	Jul	Present to SSE/PLE WGs, Announce INSIGHT theme	**IS19:** 20-25 July 2019 in Orlando, FL
	Aug		
	Sep	INSIGHT abstract/title due	*NDIA/IEEE/INCOSE proposals due TBD Sep*
	Oct		NDIA SE Conference
	Nov	INSIGHT essay draft due	
	Dec		
2020	Jan (IW)	Review INSIGHT Articles	**IW20:** TBD
	Mar	IEEE-NDIA-INCOSE Systems Security Symposium	TBD March 2020 in DC area

Call for Articles

Exploring Cyber Secure and Resilient Approaches for Feature Based Variation Management

Mission: The Systems Security Engineering Working Group and the Product Line Engineering Working Group is working a joint project to explore cyber secure and resilient approaches for feature based variation management. This call for articles focuses on the intersection between systems security engineering and product line engineering including:

- Techniques for implementing systems security as part of product line design
- Patterns for product line architectures that address systems security
- Variation management approaches for secure and resilient product line assets

Approach: The Theme Issue will accommodate ten ~2,000 word articles, preceded by a theme introduction and overview. The INSIGHT audience is the Systems Engineering community, who are concerned with systems of multiple engineering domains. Articles should not speak exclusively to a single engineering domain; but rather to a systems engineering audience concerned with the application and adoption of system security engineering and product line engineering concepts across a wide variety of project types.

Schedule
2019 Nov 15: **Abstracts Due**
Submit declarations of intent and working title, with one paragraph working abstract.
2020 Jan 1: **Draft Paper Due**
Theme Editor will review for alignment with mission
Live review at IW20 (in attendance or GlobalMeet)
Detailed comments provided to authors for improvement by March 1
2020 Apr 15: **Final Paper Due**
Formatted for required style, with author-company release if necessary.
INSIGHT editors will contact authors directly with copy-editing suggestions.
2020 September: INCOSE INSIGHT publication

General guidance
- Articles must speak meaningfully to systems engineers
- The INSIGHT style and citation guides will be sent to all authors.
- These are not journal articles. Approximately 2000 words is the target. Reference lists should be minimal.
- Do not use the MS Word reference tool, make them standard text in "Chicago Style", per INSIGHT style guide.
- Acceptance of an abstract does not guarantee publication of an article. Final decision for publication will be made by the Editorial Board based on the final article

Submissions: All submissions should be MS Word, 12 point Times New Roman, single spaced, with minimal or no (preferred) use of styles. With 1 inch margins on 8-½ x 11 inch layout this is about 4 pages of text, exclusive of graphics. Graphics are highly encouraged and do not take away from word-count. NO PDF. Send submissions to Theme Editor wilsondrbeth@aol.com attached as an MS Word document. Be sure to include a title, and also your name and email address in your by-line underneath the article title.

20 August 2019

INSIGHT December 2020
Product Line Engineering in Context

The contexts supporting and surrounding the practical application of Product Line Engineering

- PLE & engineering methodologies:
  - PLE & MBE, PLE & DevOps, PLE & Agile, PLE & Lean Six Sigma, ...
- PLE & quality needs and engineering concerns:
  - PLE & Security, PLE & IP protection, PLE & QA (e.g., traceability),
    PLE & Temporal Management, ...
- PLE & the business:
  - PLE & customer relationships, PLE & field maintenance, PLE & portfolio management, PLE & market research, PLE & digital twins, ...

Call for Articles
INCOSE INSIGHT Special Edition:
Product Line Engineering in Context

Abstract deadline: February 28

The INCOSE Product Line Engineering (PLE) Working Group is soliciting papers to explore the contexts supporting and surrounding the practical application of PLE.

The systems engineering literature contains a great deal of material concerning the fundamentals of Product Line Engineering, its history, rationale, and formulation. The community has also done a superb job of explaining how PLE can be implemented and realized in technology and tools, and there are many examples of PLE's successful use in mainstream practice.

The Product Line Engineering Special Edition of INCOSE INSIGHT (August 2019) covers many of these topics. However, PLE is never applied in isolation, but rather in the context of an organizational and engineering environment that may deeply affect its application. Therefore, we want to examine and understand the interactions with, and effects on, the enterprise – before, during, and after adoption of PLE. We want to share proven techniques and patterns with our INCOSE colleagues to promote successful, pragmatic adoption in their environment and in their organization.
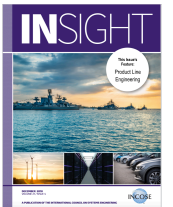
Specific topics we would like to cover include:

- PLE and other chosen methodologies - PLE and DevOps, PLE and Agile, PLE and Lean Six Sigma, PLE and MBE, …
- PLE and specific quality needs and engineering concerns, - PLE and Security, PLE and IP protection, PLE and QA (e.g., traceability), PLE and temporal management, …
- PLE and the business - PLE and customer relationships, PLE and field maintenance, PLE and portfolio management, PLE and market research, PLE and digital twins …
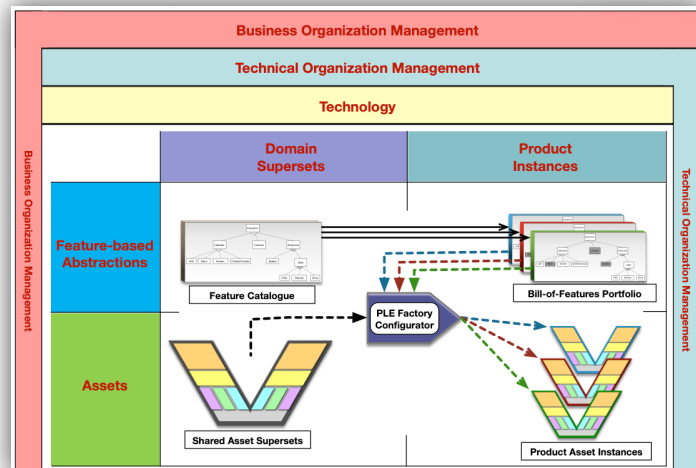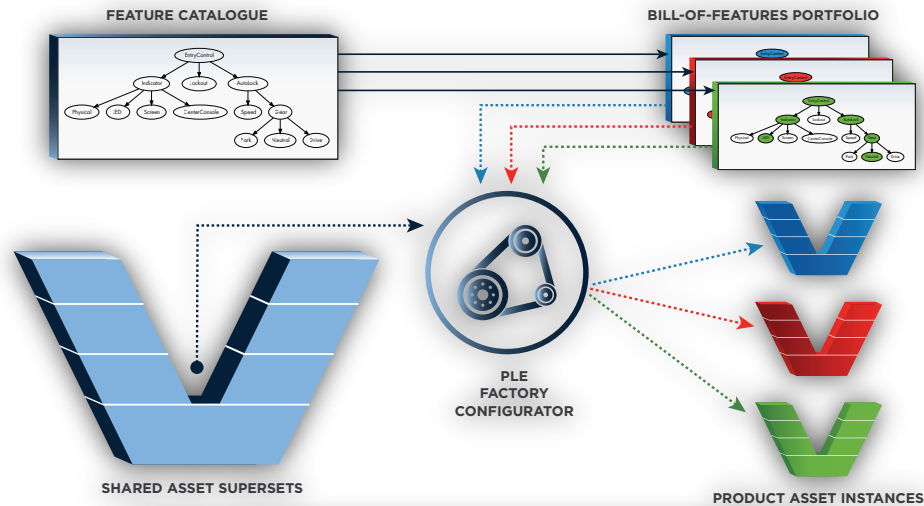
Schedule & Submissions		Format
28 February 2020	Abstracts due	The special issue will include an introduction to PLE and an overview of the articles.
1 April 2020	Draft papers due	Final articles should be 2,000 to 3,000 words, plus figures.
1 July 2020	Final papers due	
December 2020	Publication	

Submit abstracts (with a title) to the Theme Editor, Drew Stovall <dstovall@biglever.com>

PLE WG Products

PLE WG Events at IW 2020

Event	Time	Location
Product Line Engineering WG Open Workshop	Sunday 13:00-14:00	Salon B
Product Line Engineering WG Member Working Meeting	Tuesday 10:00-11:00	Salon C

2020
Annual **INCOSE**
international workshop
Torrance, CA, USA
January 25 - 28, 2020

www.incose.org/IW2020