



**2017**

annual **INCOSE**  
international workshop

Los Angeles, CA, USA

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# CAB Update: MB Transformation

## Model-Based Transformation: Planning and Assessment Instrument

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# Model-Based (MB) Transformation: A Planning and Assessment Instrument

- Draft product of INCOSE Model Based Transformation
- A simple instrument: Intended nature and use
- Introduction to the instrument
- Example uses to date at other INCOSE events
- Use at IW: CAB break-out session
- Use in your home enterprise
- Use by others at IW: MBSE Workshop wrap-up



# Draft product of INCOSE Model Based Transformation

- The INCOSE Model Based Transformation plan was reviewed with the Board and CAB in 2016 by Troy Peterson.
- This presentation is limited to one of the early draft products described by that plan:
  - The Planning and Assessment Instrument



# A simple instrument: Intended nature and use

- Intentionally very simple:
  - Focused “one level down” from the intention to apply model-based methods to SE.
  - Level of detail = the individual ISO 15288 life cycle processes.
- Intended to address these important questions:
  - What are you trying to improve? (Which 15288 processes?)
  - Where are the biggest potential gains? The easiest potential gains?
  - What is already improved?
- But not:
  - How will your goals be accomplished?
  - What are the details of your plan?
  - Not a CMMI

# Introduction to the instrument--

## System of Innovation (SOI) Pattern Logical Architecture

(Adapted from ISO/IEC 15288:2015)

### INCOSE Model Based Transformation Impact Roadmap: An Assessment and Planning Dashboard Summary

What has modeling already impacted? What future opportunities?  
— Use this instrument to assess the industry, your segment, or your company, and to make and summarize future plans.

#### Directions:

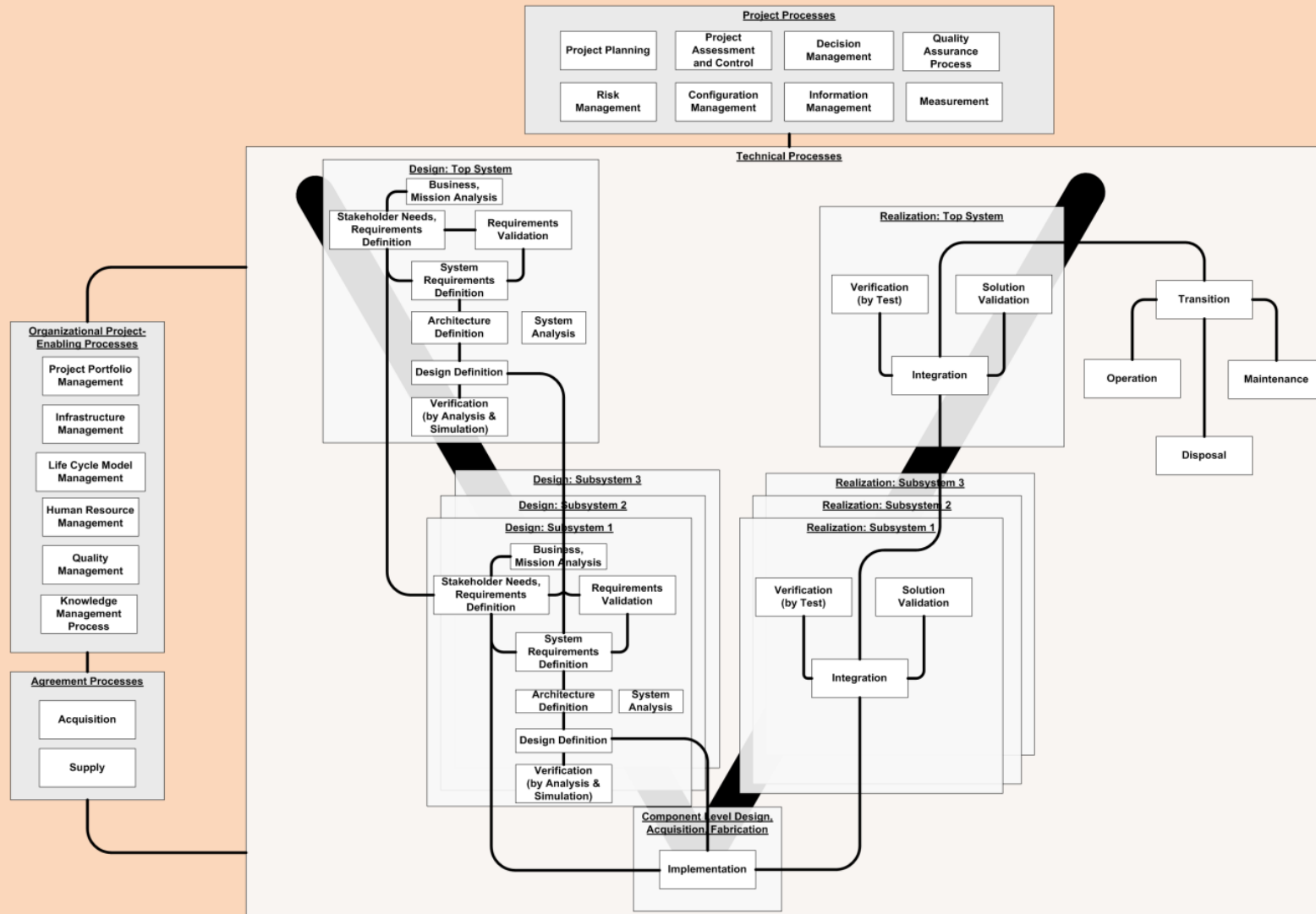
Please attach "Sticky Dots" on the 15288 "Vee" Diagram, to mark:  
 Sticky Dots  
 ● Needs for improved future MBSE use (even if most difficult)  
 ○ Opportunities for improved future MBSE use (low-hanging fruit)  
 ● Already accomplished cases of MBSE-aided progress

Please mark your "Sticky Dots" with letters to indicate specific domain of interest to you (Aero, Auto, Education, etc.)

Please add "Sticky Notes" to make additional observations.

Sticky note

To obtain your own copy for local use, contact:  
 Troy Peterson [tpeterson@systemxi.com](mailto:tpeterson@systemxi.com) Joachim Fuchs [joachim.fuchs@esa.int](mailto:joachim.fuchs@esa.int)  
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○	All domains (general)
A	Automotive
B	Aerospace
C	Health Care / Medicine
D	Consumer Products
E	Energy Systems
F	Communications
G	Education
H	Information Systems
I	Advanced Manufacturing
J	Logistics
K	Buildings & Facilities
L	
M	
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# INCOSE Model Based Transformation Impact Roadmap: An Assessment and Planning Dashboard Summary

What has modeling already impacted? What future opportunities?

- Use this instrument to assess the industry, your segment, or your company, and to make and summarize future plans.

## Directions:

Please attach “Sticky Dots” on the 15288 “Vee” Diagram, to mark:

- Sticky Dots
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# Example uses to date at other INCOSE events

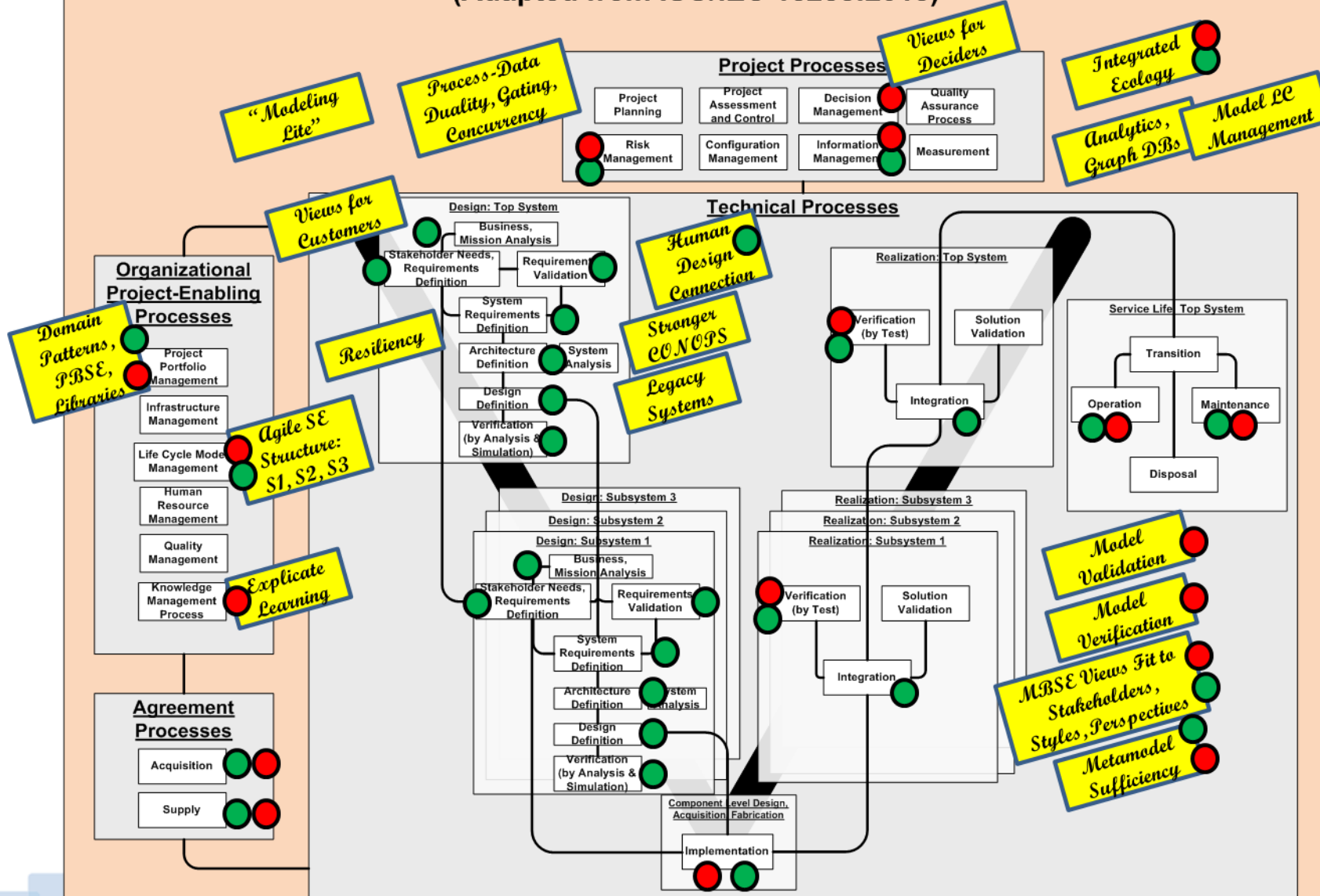


- Energy Tech 2016:
  - Critical Infrastructure Protection and Recovery, including Electrical Power Grid
- Agile Health Care Systems Conference 2016



## System of Innovation (SOI) Pattern Logical Architecture

(Adapted from ISO/IEC 15288:2015)







# Use at IW: CAB break-out session

- What we'd like from you:
  - Your opinions, by filling out the instrument, about the state of the art across the CAB enterprises.
  - Feedback to improve the instrument
- And, for your company:
  - Use a copy privately at home for your own assessment and planning (your internal use)



# Use in your home enterprise

- A more packaged version will follow, but we'd be happy to have your feedback on this draft.

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## Use by others at IW: MBSE Workshop wrap-up

- A brief session on this instrument will also occur during the wrap-up of the MBSE Workshop at this IW meeting



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[www.incose.org/IW2017](http://www.incose.org/IW2017)

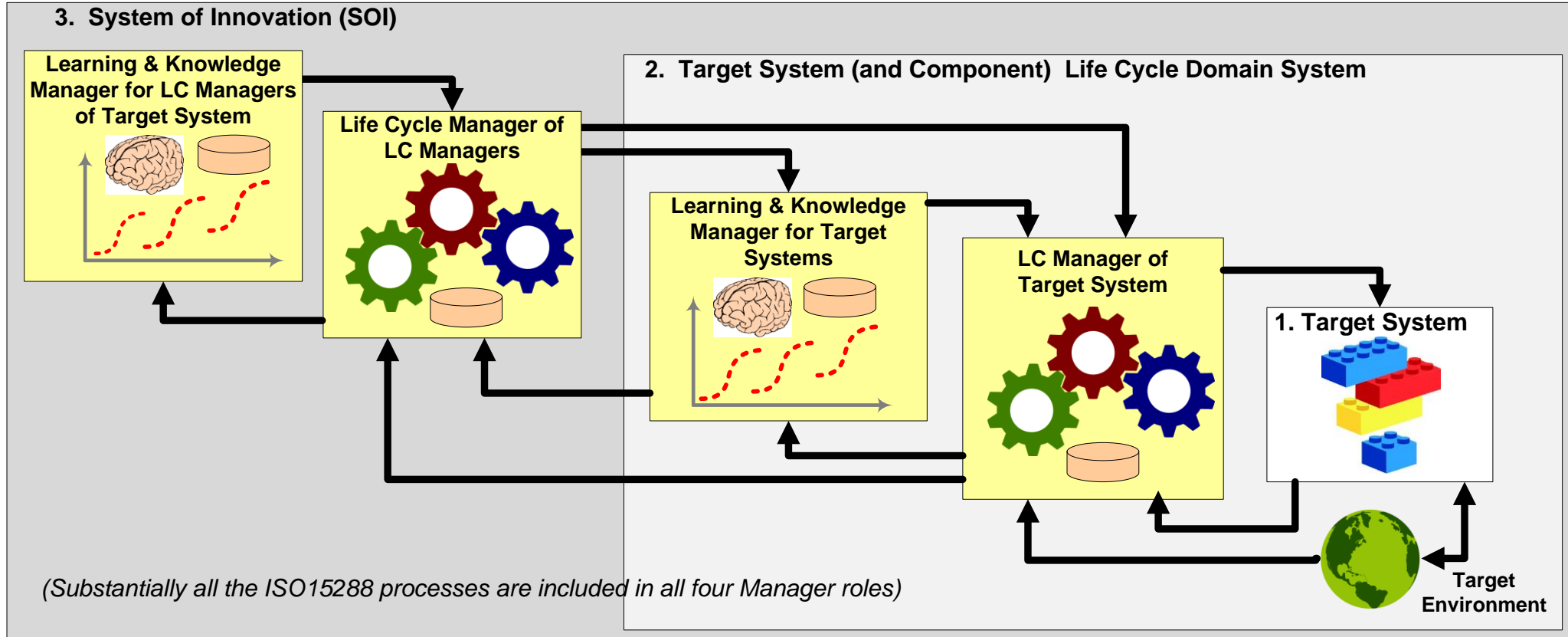


# Additional information

- For complex enterprises and markets, it can also be useful to ask about different instances of the ISO 15288 life cycle processes:
  - Treating these as (changeable) systems in their own right, in need or prioritized change planning.
  - The INCOSE ASELCM Pattern provides a powerful construct for viewing these, and “marking” them for attention . . .

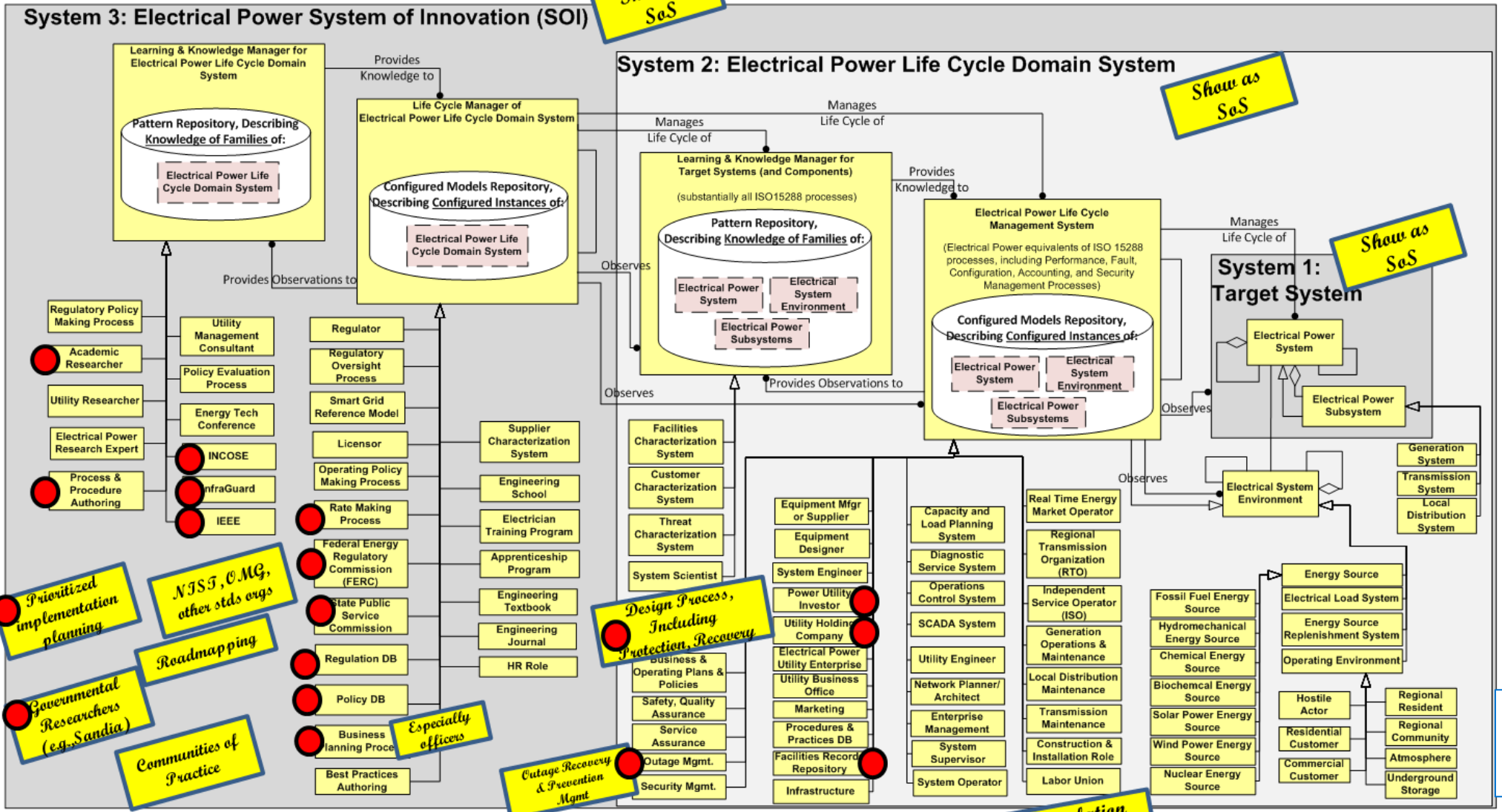


# ASELCM Pattern Logical Architecture



- System 1: Target system of interest, to be engineered or improved.
- System 2: The environment of (interacting with) S1, including all the ISO15288 life cycle management systems of S1, and including learning about S1.
- System 3: The life cycle management systems for S2, including learning about S2.

# Electrical Power Domain : ASELCM System 2, System 3



Show as SoS

Show as SoS

Show as SoS

Prioritized implementation planning

NJSS, CMG, other stds orgs

Governmental Researchers (e.g., Sandia)

Roadmapping

Communities of Practice

Especially officers

Design Process, Including Protection, Recovery

Outage Recovery & Prevention Mgmt

Resilience Model

Group related roles

Simulation Tools

Insurers

From Energy Tech 2016 Conference

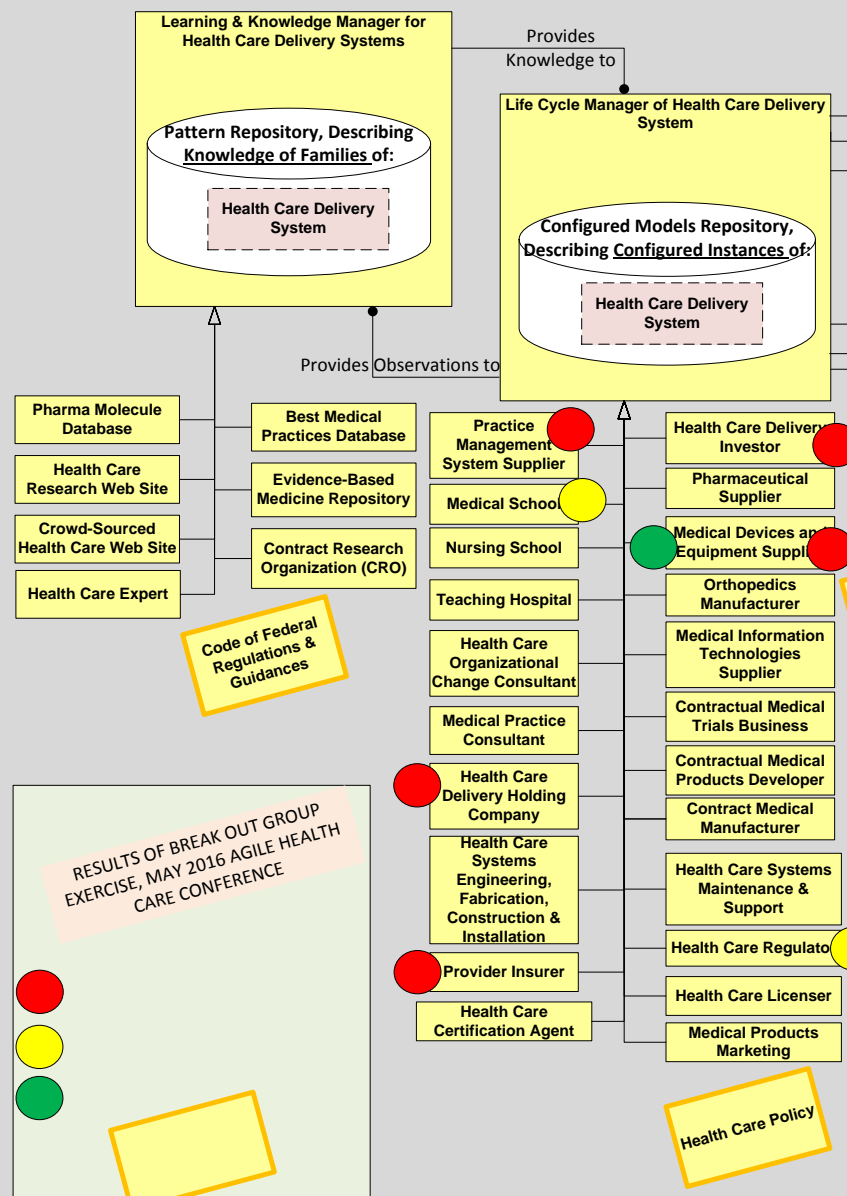
INCOSE Agile System Life Cycle Management Perspective: System 1, 2, 3 Framework for Electrical Power Domain  
INCOSE Patterns Working Group  
Bill Schindel  
V1.3.1 12.04.2016

# Health Care Systems Domain : ASELCM System 2, System 3



From INCOSE Agile Health Care Systems Conference 2016.

## 3. Health Care System of Innovation (SOI)



## 2. Patient Health Life Cycle Domain System

