



33rd Annual **INCOSE**
international symposium

hybrid event

Honolulu, HI, USA
July 15 - 20, 2023



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Utilizing the INCOSE Services Integration Model to Optimize Value Delivery

Executive Summary

- Systems Engineering Vision 2035 calls for model-based discipline
- An INCOSE Services Integration Model is being used to optimize delivery of INCOSE services to members
- Purpose is to link strategy, stakeholder needs, technical operations, services operations, and member feedback to ensure timely, relevant value delivered to members
- An overview of the model and current efforts is given
- Access via the INCOSE SE Lab or the web is explained
- Scope is INCOSE Services, with potential for INCOSE-wide effort

Optimize Delivery of INCOSE Services to Members

Agenda

INCOSE
Services

Information
Sources

Modeling
Effort

Benefits
Gained

Member
Access

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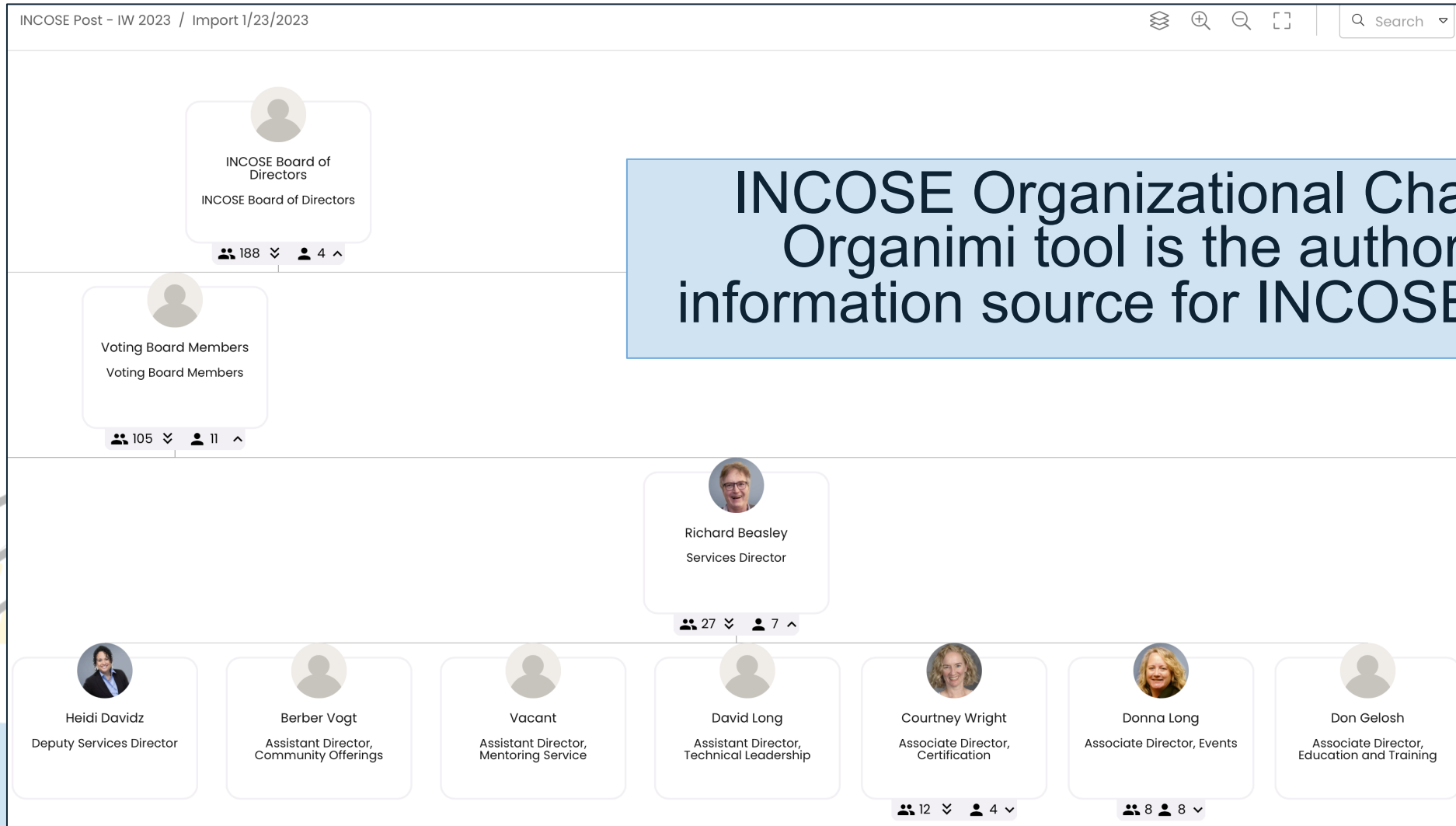
Member
Access

What are INCOSE Services?

- “INCOSE Services” is a newer organizational element
- Technical Operations produces content, and Services Operations distributes content
- Provide direct value to members
- Must strongly integrate across INCOSE

“Provide value through impactful services”

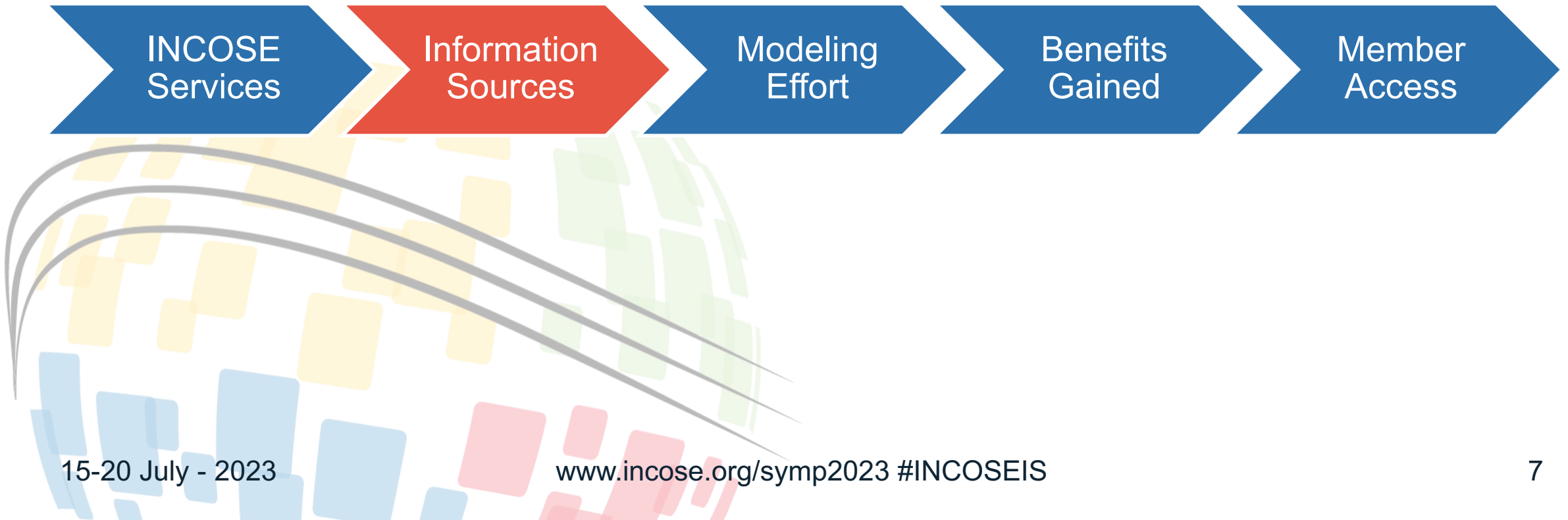
INCOSE Services Organization



INCOSE Organizational Chart in the Organimi tool is the authoritative information source for INCOSE structure

Display of Organimi information as of July 5, 2023

Agenda



Information Sources

*Two-Way
Communication*



Agenda



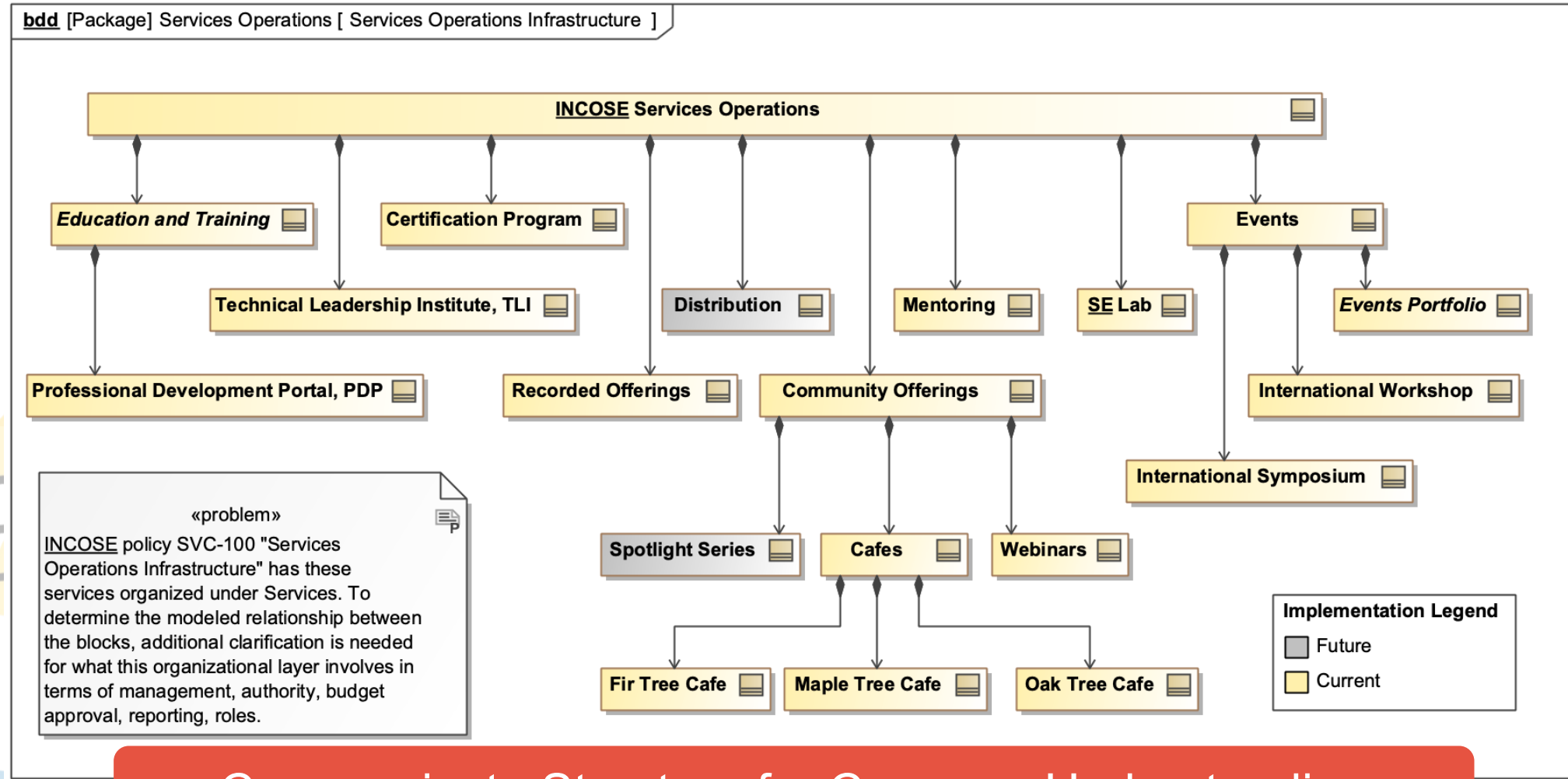
Why Model?

- SE Vision 2035 call
- Provide value and enable curiosity
- Integrate across INCOSE efforts
- Define ambiguous relationships
- Explicitly characterize relationships
- Map information flows and processes
- Clearly expose disconnects, gaps, opportunities

Value in Modeling Process, Not Just in Final Artifact

Services Operations Infrastructure

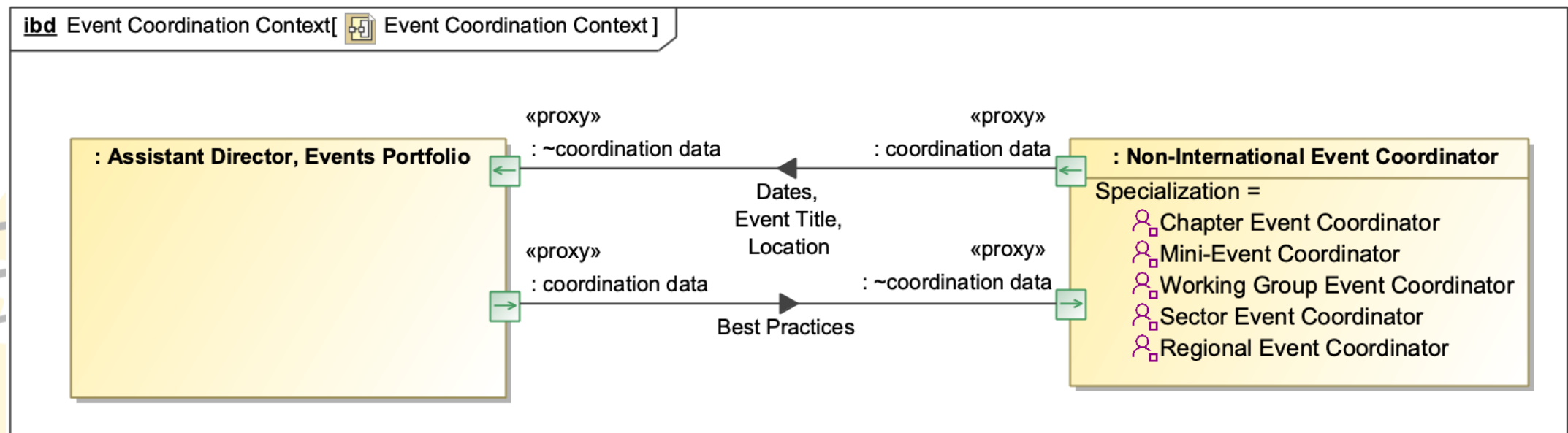
*Living models,
open for evolution
and update*



Communicate Structure for Common Understanding

Analyze Flow

- Understand the flow of information
- Communicate processes



Analyze to Optimize Flow for Value Delivery

Understand Dependencies

- Examining the dependencies between INCOSE Services and Working Groups (WG) aids planning and delivery
- Provides visibility to ensure specific WG needs are understood and met

Criteria

Row Element Type: Group

Row Scope: Working Groups {}xy

Dependency Criteria: Dependency,Dependency (Implied)

Legend

Dependency

	SE Lab	Certification Program	Community Offerings	Distribution	Education and Training	Events	Mentoring	Recorded Offerings	Technical Leadership Institute,
Working Groups	2				1	5	1		
Agile Systems and Systems Engineering						Dependency			
Architecture						Dependency			
Artificial Intelligence Systems						Dependency			
Automotive						Dependency			
Competency	Dependency				Dependency	Dependency			
Complex Systems						Dependency			
Configuration Management						Dependency			
Critical Infrastructure Protection and Recovery	Dependency					Dependency			
Decision Analysis						Dependency			
Defense Systems						Dependency			
Digital Engineering Information Exchange						Dependency			
Empowering Women						Dependency	Dependency		
Enterprise Systems						Dependency			

Dependencies for Robust Support

Map Working Group Dependencies for Robust Support

Value Proposition Initiative Link

Criteria														
Row Element Type:	Block	...		Column Element										
Row Scope:	Value Proposition Initiative	{}xy		...		Column								
Dependency Criteria:	Trace			...		Direction: B								
Legend														
Trace														
		SE Lab	Certification Program	Community Offerings	Distribution	Education and Training	Events	Mentoring	Recorded Offerings	Technical Leadership Institute, TLU				
Value Proposition Initiative		2	4	2	2	5	4	2	2	2				
Certification Value Stream			2											
How does a certified workforce improve my organizational goals			Trace											
Why should I become certified and maintain / upgrade my certification			Trace											
Event Value Stream							2							
How can my organization further its goals with sponsorship / participation							Trace							
What does my organization gain from sponsoring employee participation							Trace							
Membership Value Stream		2	2	2	2	2	2	2	2	2				
Why should I join INCOSE and/or maintain my membership		Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace				
Why should organization join INCOSE and how will it benefit bottom line		Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace				
Product Value Stream						1								
What information is available in the website and how do I navigate it														
What materials are available from INCOSE and how do I access them						Trace								
Why should I utilize / depend on INCOSE generated materials														
Training Value Stream						2								
How do I evaluate my capabilities and identify required training gaps						Trace								
What training is available for my organization						Trace								

- INCOSE Value Proposition Initiative (VPI) examined value propositions for systems engineering, corporate and individual INCOSE members
- VPI questions could be used to develop requirements for INCOSE Services
- In interim, INCOSE Services traced to VPI to examine coverage

Understand Linkage between Services and Value

SE Vision 2035

- Use of SE Lab enables linking to other INCOSE model-based artifacts
- The Services Integration Model uses an SE Vision 2035 model
- Ensure the INCOSE Services support the SE Vision 2035
- Assess portfolio coverage
- With FuSE, ensure vision is being realized

Criteria									
Row Element Type:		Operation							
Row Scope:		Strategy							
Dependency Criteria:		Allocate							
Legend									
↗ Allocate									
		SE Lab	Certification Program	Community Offerings	Distribution	Education and Training	Events	Mentoring	Recorded Offerings
		Technical Leadership Institute,							
Strategy		7	5	5	5	5	6	3	5
Adapt to Changing Environment()		↗		↗	↗	↗			↗
Advance SE Discipline()		↗	↗				↗		
Direct Investments()									
Evolve SE Capability()		↗	↗	↗	↗	↗	↗	↗	↗
Grow SE Skill Base()		↗	↗	↗	↗	↗	↗	↗	↗
Improve Competitiveness()		↗	↗				↗		
Improve Stakeholder Responsiveness()		↗		↗	↗	↗	↗		↗
Support Collaborative Effort()		↗	↗	↗	↗	↗	↗	↗	

Ensure Vision is Realized with Tangible Deliveries

Configuration Management

- Version control in Teamwork Cloud
- Released version available on Collaborator
- RACI with Services Director final approval
 - R (Responsible): Modeling Team
 - A (Accountable): Services Director
 - C (Consulted): Services Team
 - I (Informed): Board of Directors

Manage Configuration through INCOSE Evolution

Backlog Managed in Model

Criteria				
Element Type: Stakeholder Need		Scope (optional): Open		Filter:
#	Owner	Id	Name	Documentation
1	2-In Work	2026	Add <u>FuSE</u> project usage – need access granted	<u>INCOSE</u> Model
2	2-In Work	2043	Generic lifecycle of a Service as a state machine – We have ideas of generic lifecycle of a service to start to model (like TPP for Te	Generic Service
3	1-Backlog	2060	Add membership data (numbers, locations, sectors, trends) from Membership team	Context for Service
4	1-Backlog	2061	Add revenue information and link to products/services	Context for Service
5	1-Backlog	2062	Add information about member engagement with various Services	Context for Service
6	1-Backlog	2065	Add <u>measures of performance</u> and goals for those measures	Requirements for Service
7	1-Backlog	2027	Add navigation details	Model Management
8	1-Backlog	2029	Add that only <u>UK</u> people can see <u>UK</u> events	Specific Service
9	1-Backlog	2030	Add <u>UK</u> and MOA relationships to certification	Specific Service
10	1-Backlog	2031	Map PDP taxonomy to working groups – see Kirk's table	Context for Service
11	1-Backlog	2033	Add professional development flow and map in what <u>INCOSE</u> does	Specific Service
12	1-Backlog	2034	Add email information from Richard Beasley on publication elements	Specific Service
13	1-Backlog	2035	Submit new Services procedure with Services model content to PMC for approval	Generic Service
14	1-Backlog	2036	Resolve whether PDP Content Processing Volunteers should work for PM or Curator	Specific Service
15	1-Backlog	2037	Berber is working on procedures for the Community offerings, add to model when ready	Specific Service
16	1-Backlog	2039	For Certification and Handbook needs, add handbook development analogy to SW development – mainline and branches, need to	Specific Service
17	1-Backlog	2042	Richard is running an IW 2023 session looking at what Services can do for WGs and vice-versa. That can allow us to map the serv	Context for Service
18	1-Backlog	2044	Add <u>activity</u> diagram for IS papers – call for papers, paper from submitted, to accepted, to final submission, to presented, to RO	Specific Service
19	1-Backlog	2045	Based on the work flows / procedures, Richard thinks we can get a model of which directors / areas of <u>INCOSE</u> (services and wide	Context for Service
20	1-Backlog			

Manage Backlog to Focus on Highest Impact Analysis

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Benefit Gained

“There is tremendous value in the INCOSE Services integration modeling effort. Modeling helps us see a holistic view of what we are trying to do in Services. As findings are uncovered, useful discussion and questions result.”

- Richard Beasley, INCOSE Services Director

INCOSE
Services
Integration
Modeling
Benefits

Prompted discussions

Uncovered logical gaps

Identified conflict

Clarified ambiguity

Optimizing delivery

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INCOSE
Services

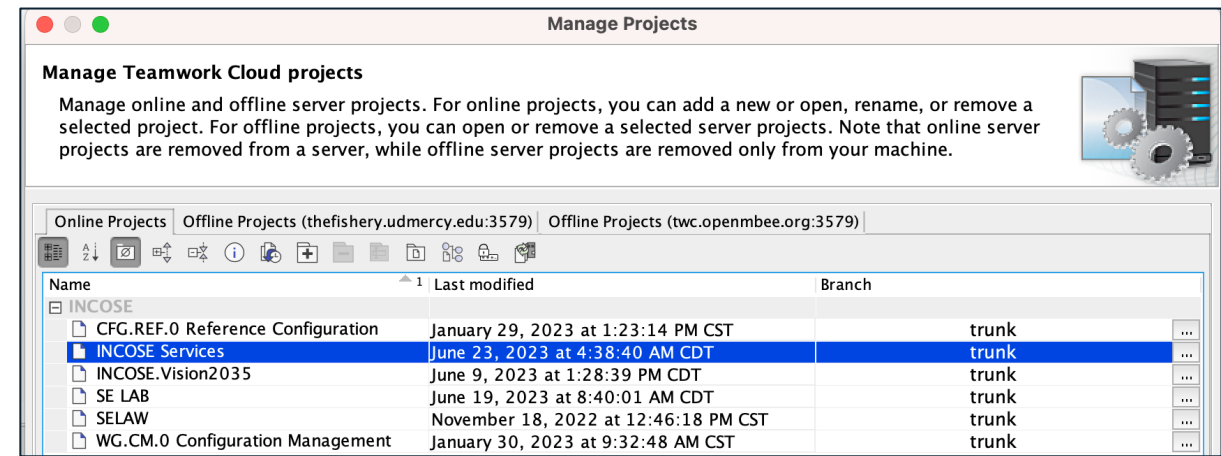
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Member Access



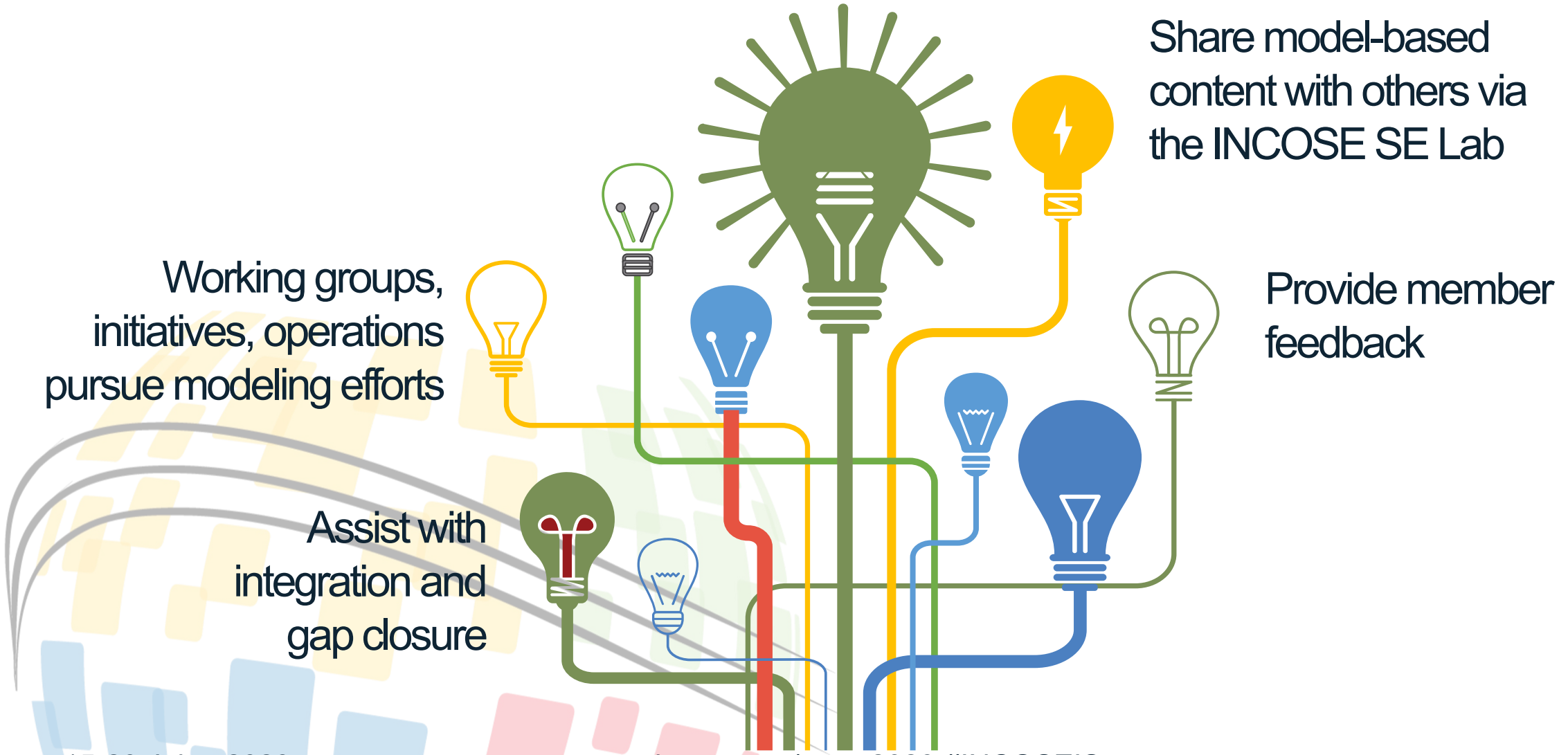
Request SE Lab
access

Follow web-based
instructions

Accessible through
web interface

Contact authors for any
feedback or questions

How You Can Contribute



15-20 July - 2023

www.incose.org/symp2023 #INCOSEIS

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