



Calibration Workshop

FuSE Program

Objectives



The vision and role of the FuSE program to reach the INCOSE VISION 2035 is clearly set out

Key factors to make the FuSE program successful are defined

The team is aware of possible risks for the FuSE program and has defined measures to mitigate these risks



Agenda



120'

Key PMO Topics

*Organization - Stream Teams
IW Concept
Stream Description*

60'

Vision Statement & Role

*The vision of the FuSE Program
is defined and the role of the
tea program is clarified*

60'

Success Factors

*Success Factors of the
FuSE Program and expectations
towards FuSE are identified*

30'

Optional: Program Charter

*The program
charter is described*

30'

Optional: Risk Assessment

*High level risks
for program success
are identified and mitigation
measures described*



30' Break

1

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Check-in (miro)



Panda-o-meter: how are you feeling today?



Agenda



120'

Key PMO Topics

Organization - Stream Teams
IW Concept
Stream Description

60'

Vision Statement & Role

The vision of the FuSE Program
is defined and the role of the
tea program is clarified

60'

Success Factors

Success Factors of the
FuSE Program and expectations
towards FuSE are identified

30'

Optional: Program Charter

The program
charter is described

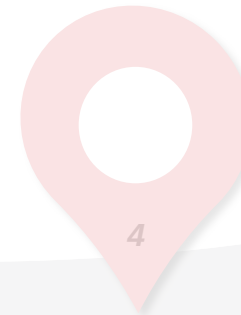
30'

Optional: Risk Assessment

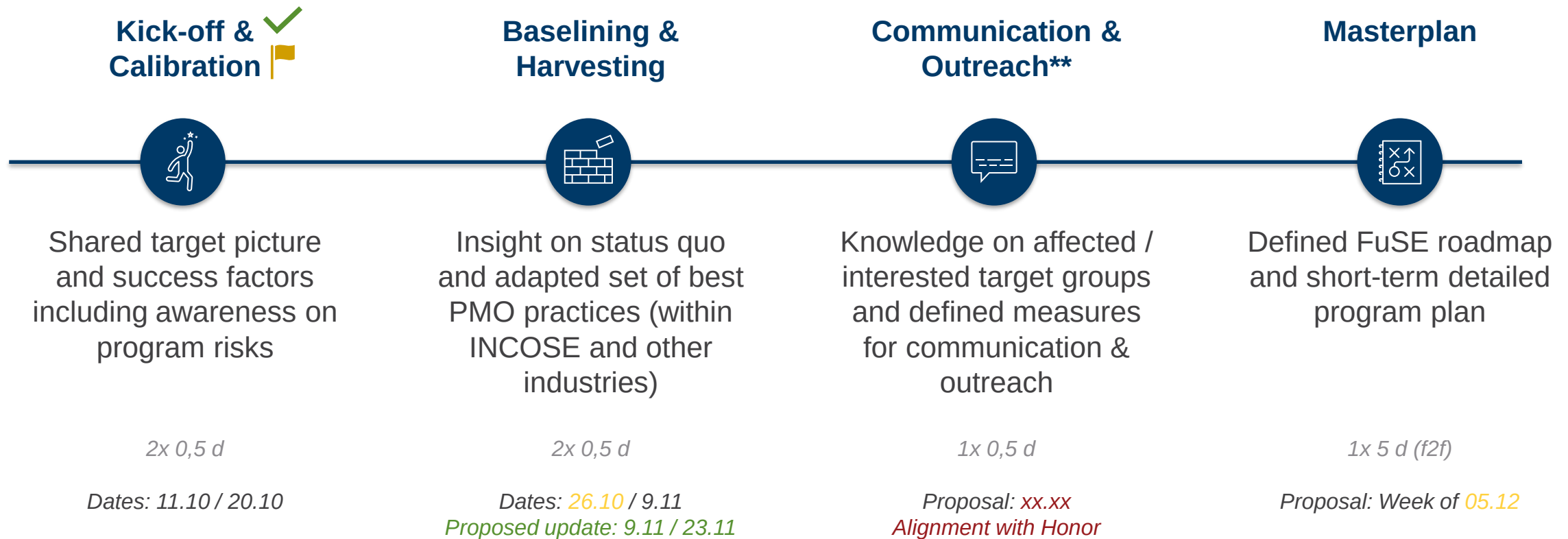
High level risks
for program success
are identified and mitigation
measures described



30' Break



The deliverables are mainly* created in dedicated workshops:



Key: Black: fixed | Yellow: to be clarified with missing stream leads | Red: yet to be scheduled | Green: updated

* Additional alignment and deep dive meetings as needed

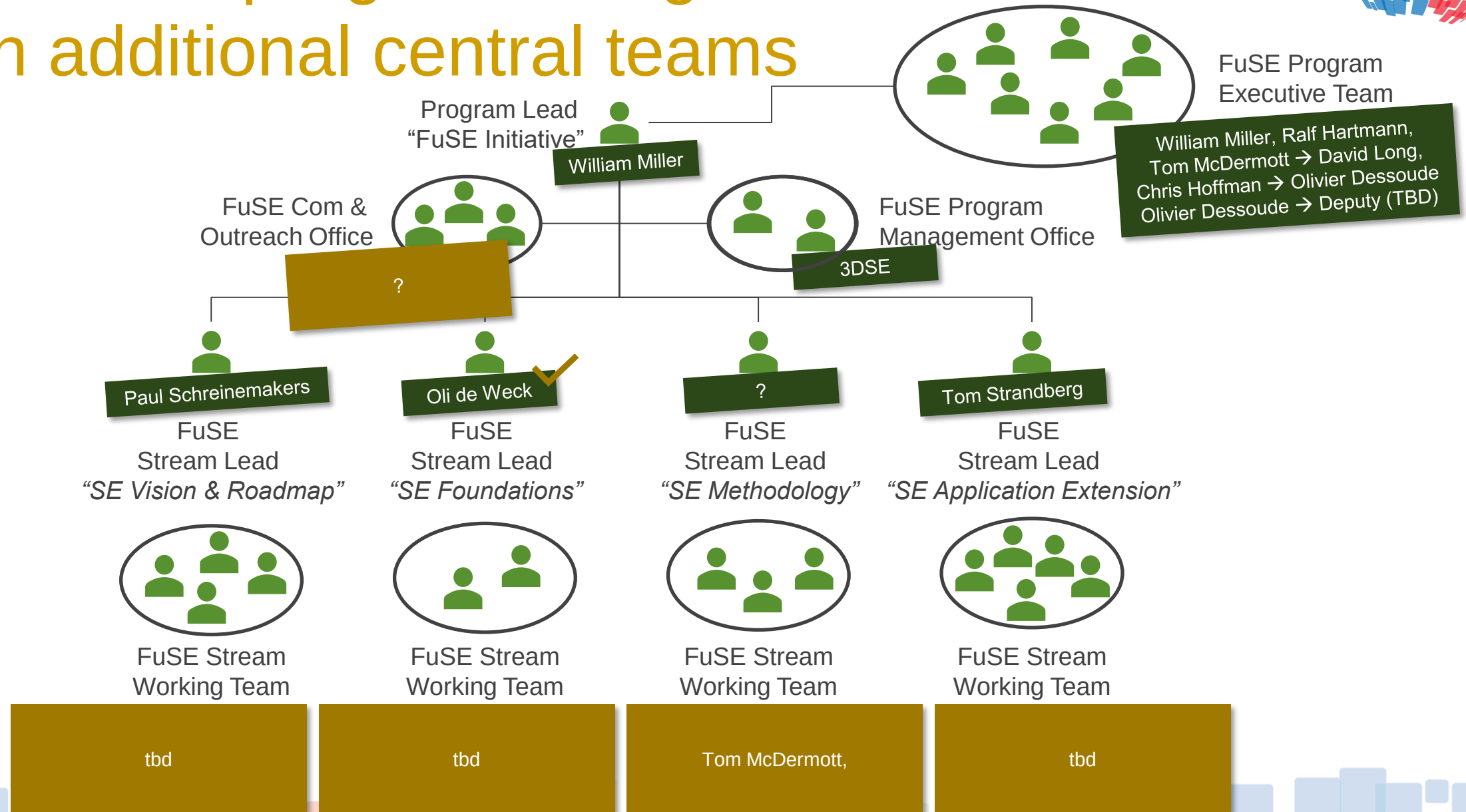
** Shift of focus if required



Stream Teams



The FuSE program is organized in 4 streams with additional central teams



The goal is to identify first team members for the FuSE streams



Possible way to approach:

- Think of candidates that are already in the INCOSE community
- Benefit from the connection INCOSE members have to other organizations e.g., IEEE
- Have a look at presenters from prior IS to identify thought leaders that can be involved in FuSE
- Get people to apply to be part of FuSE

Also consider:

- Story telling
- Application forms

First feedback by 26.10.22 @ martina.feichtner@incose.net



Update FuSE @ IW 2023





Agreed agenda for FuSE @ IW 2023

	SAT	SUN	MON	TUE
08:00		FuSE Working Sessions (in person only) - 4 rooms	FuSE Working Sessions (in person only) - 4 rooms	
08:30				Wrap-up FuSE (for participants)
09:00				
09:30	Break			
10:00	FuSE Kick-off	Break		
10:30				
11:00				Wrap-up FuSE
11:30				
12:00	Lunch			
12:30				
13:00				
13:30				
14:00	FuSE Interactive working session (4 rooms)			
14:30		Break		
15:00	Break			
15:30				
16:00	FuSE Interactive working session (4 rooms)			
16:30				

It is anticipated to have 4 rooms for each session (1 room for every stream) and be able to form groups within these sessions / rooms.
4 rooms with each space for ~4 groups

Additional room for the FuSE team to pre and post process working sessions / Team internal meetings on SUN / MON afternoon



IW Workshop Concept Workshop documentation



Agreed agenda for FuSE @ IW 2023

	SAT	SUN	MON	TUE
08:00				
09:00				
10:00				
11:00				
12:00				
13:00				
14:00				
15:00				
16:00				
17:00				
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20:00				
21:00				
22:00				
23:00				
24:00				

It is anticipated to have 4 topics for each session (2 topics for every stream) and be able to form groups within these sessions / rooms.

4 topics per topic stream / group

SAT

SUN

MON

TUE

Detailed concept for FuSE Working Sessions

Topic	Facilitator	Co-facilitator	Topic
Topic 1			Topic 2
Topic 3			Topic 4
Topic 5			Topic 6
Topic 7			Topic 8
Topic 9			Topic 10
Topic 11			Topic 12
Topic 13			Topic 14
Topic 15			Topic 16
Topic 17			Topic 18
Topic 19			Topic 20
Topic 21			Topic 22
Topic 23			Topic 24
Topic 25			Topic 26
Topic 27			Topic 28
Topic 29			Topic 30
Topic 31			Topic 32
Topic 33			Topic 34
Topic 35			Topic 36
Topic 37			Topic 38
Topic 39			Topic 40
Topic 41			Topic 42
Topic 43			Topic 44
Topic 45			Topic 46
Topic 47			Topic 48
Topic 49			Topic 50
Topic 51			Topic 52
Topic 53			Topic 54
Topic 55			Topic 56
Topic 57			Topic 58
Topic 59			Topic 60
Topic 61			Topic 62
Topic 63			Topic 64
Topic 65			Topic 66
Topic 67			Topic 68
Topic 69			Topic 70
Topic 71			Topic 72
Topic 73			Topic 74
Topic 75			Topic 76
Topic 77			Topic 78
Topic 79			Topic 80
Topic 81			Topic 82
Topic 83			Topic 84
Topic 85			Topic 86
Topic 87			Topic 88
Topic 89			Topic 90
Topic 91			Topic 92
Topic 93			Topic 94
Topic 95			Topic 96
Topic 97			Topic 98
Topic 99			Topic 100

Break

Detailed concept for FuSE Kick-off

Topic	Facilitator	Co-facilitator	Topic
Topic 1			Topic 2
Topic 3			Topic 4
Topic 5			Topic 6
Topic 7			Topic 8
Topic 9			Topic 10
Topic 11			Topic 12
Topic 13			Topic 14
Topic 15			Topic 16
Topic 17			Topic 18
Topic 19			Topic 20
Topic 21			Topic 22
Topic 23			Topic 24
Topic 25			Topic 26
Topic 27			Topic 28
Topic 29			Topic 30
Topic 31			Topic 32
Topic 33			Topic 34
Topic 35			Topic 36
Topic 37			Topic 38
Topic 39			Topic 40
Topic 41			Topic 42
Topic 43			Topic 44
Topic 45			Topic 46
Topic 47			Topic 48
Topic 49			Topic 50
Topic 51			Topic 52
Topic 53			Topic 54
Topic 55			Topic 56
Topic 57			Topic 58
Topic 59			Topic 60
Topic 61			Topic 62
Topic 63			Topic 64
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Topic 67			Topic 68
Topic 69			Topic 70
Topic 71			Topic 72
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Topic 75			Topic 76
Topic 77			Topic 78
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Topic 81			Topic 82
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Topic 85			Topic 86
Topic 87			Topic 88
Topic 89			Topic 90
Topic 91			Topic 92
Topic 93			Topic 94
Topic 95			Topic 96
Topic 97			Topic 98
Topic 99			Topic 100

Lunch

Detailed concept for Wrap-up FuSE (for participants)

Topic	Facilitator	Co-facilitator	Topic
Topic 1			Topic 2
Topic 3			Topic 4
Topic 5			Topic 6
Topic 7			Topic 8
Topic 9			Topic 10
Topic 11			Topic 12
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Topic 17			Topic 18
Topic 19			Topic 20
Topic 21			Topic 22
Topic 23			Topic 24
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Topic 99			Topic 100

Detailed concept for Wrap-up FuSE

Topic	Facilitator	Co-facilitator	Topic
Topic 1			Topic 2
Topic 3			Topic 4
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Break

Detailed concept for FuSE Interactive working session

Topic	Facilitator	Co-facilitator	Topic
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Topic 97			Topic 98
Topic 99			Topic 100

- invite people to be part of FuSE:
 - survey before IW / small form
 - > bring in your ideas
 - > start in waves
 - WG members
 - people that left INCOSE



It is anticipated to have 4 rooms for each session (1 room for every stream and be able to form groups within these sessions). 4 rooms with each space for ~4 groups.

Also set the stage of the session 35

Concept will be updated based on your feedback

- invite people to be part of FuSE: survey before IW / small form --> bring in your ideas --> start in waves - WG members - people that left INCOSE
- Also set the stage of the se vision

Detailed concept for FuSE Interactive working session – Workshop documentation

Detailed concept for FuSE Interactive working session

Alternatives	World Café	Interactive Survey
Objective / Outcome	Shape and discuss key topics of FuSE stream	Provide your specific input to key questions of the Future of Systems Engineering
Method	World Café	Presentation of results with integrated live survey questions
Content / Agenda	Present topic (~ 5 min) Discuss topic (~10 min) Switch	Presentation (1 h)
Facilitators	12-16 facilitators (1 moderator for every café; 3-4 cafés for every streams)	4 facilitators (1 presenter for every stream)
Material	World café poster, pens	Presentation, Mentimeter
Participants	~80 (~20 for each stream), onsite only	Open, hybrid
Infrastructure	4 rooms (that can be split in 4 individual rooms)	4 rooms + 4 virtual meetings
Pro	Better interaction and more detailed and precise feedback. This will also allow us to be more open	Will reach more ppl - however, we will only get feedback based on very specific questions
Promotion	There are some cross-roads on the way towards the Vision 2035. Get involved and discuss key questions with us to take the right directions.	What is FuSE all about and are we on the right track? Come to our presentation, learn more about FuSE, and provide your valuable input in the integrated live survey.

Update: the interactive working session will be onsite only

Date	Time	Topic	Facilitator
2023-09-14	14:00	Public meeting	

Feedback

We won't be able to have this many facilitators	Make sure that online participation is guaranteed	For hybrid we will need a tech person online and in the room
Applications extension would need to reach out beyond Torrance	Will presentation of topics follow part 4 of the vision?	How to select the participants (limited number of participation)
offline groups vs FF groups		

Concept will be updated based on your feedback

Feedback

- We won't be able to have this many facilitators
- Make sure that online participation is guaranteed
- For hybrid we will need a tech person online and in the physical room
- Applications extension would need to reach out beyond Torrance
- will presentation of topics follow part 4 of the vision?
- How to select the participants (limited number of participation)
- offline groups vs FF groups

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We won't be able to have this many facilitators	have online only break out teams	Add time slots for FuSE team data wrap-up session

- We won't be able to have this many facilitators
- have online only break out teams
- Add time slots for FuSE team daily wrap-up sessions

Concept will be updated based on your feedback



	Jan 1	Jan 15	Jan 31	Feb 15	Feb 28
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Important that assess
participants feel that
being something better
they would not be
either

Concept will be updated based on your feedback

- Important that onsite participants feel that they bring something home that they would not be able get online

Concept will be updated based on your feedback

Detailed concept for Wrap-up FuSE – Workshop documentation



Detailed concept for Wrap-up FuSE

Alternatives	Presentation
Objective / Outcome	Share key takeaways from workshop and next steps, invite to get involved.
Method	Presentation
Content / Agenda	• <i>Optional Recap (e.g., Stats / Fact Sheet on FuSE @ IW) (tbd – 5 min)</i> • Key takeaways and next steps (Bill –15 min) • Involve yourself (Mentimeter) and how to get involved (tbd – 10 min)
Facilitators	FuSE Lead and Strem Leads
Material	Presentation, Mentimeter
Participants	Open; hybrid
Infrastructure	Plenary + virtual meeting
Pro	-
Promotion	-



	SWT	SWH	SWK	SWL
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16:00				

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Feedback

To be presented in line with the IW Quad charts

Concept will be updated based on your feedback

Feedback

- To be presented in line with the IW Quad charts

The goal is to agree on a common working session concept for FuSE @ IW 23



Possible way to approach:

- Having a look at the workshop concepts, does those sound good for you?
- What question might be interesting to ask at the IW for your stream? Either in the plenary session or in the interactive working session?
- What 3-4 topics (e.g., AI, digital transformation, smart cities, MBSE, ...) might be interesting to discuss at the IW for your stream?
- What 3-4 topics (e.g., AI, digital transformation, smart cities, MBSE, ...) might be interesting to work on at the IW for your stream?

First feedback by 26.10.22 @ martina.feichtner@incose.net

Also consider:

- How many facilitators + supporters can FuSE provide?
- How to efficiently interact in a hybrid way?
- How might the community respond a hybrid approach?
- How can collaborative sponsors be attracted to the working sessions?



Description of FuSE Streams



The FuSE Program is organized in 4 streams

Recap (Kick-off Workshop)



	SE Vision & Roadmap	SE Foundations	SE Methodology	SE Application Extension
Objective	Refine SE Vision 2035 and detail the roadmap as defined in in the vision	Build up on current INCOSE Foundations Stream projects	Build on current Methodology Stream projects and evaluate current tools / environments / procedures / methods	Build on current Application Extension Stream projects and expand the application of systems engineering
What & Why?	• Pave the way to reach the vision • Have a measurable foundation to assess if we are on track with the vision • Align and commit to the vision within the INCOSE community	• Leverage existing working groups and projects • Identify gaps in the INCOSE project landscape that we need to reach the vision	• To what degree are current SE methods fit for purpose • What do we need to make SE methods fit for purpose • Make / adapt methods fit for purpose	• Extend reach into more organizations • Engage in a more inherent manner • Branch out to sociotechnical systems --> SE needs to be on the policy table • “Create a better world through systems engineering”

FuSE Stream Description for IW2023

Social Media (Proposal Bill)



SE Vision & Roadmap

The SE Vision and Roadmap stream drives implementation, integration, assessment, and corrective actions of the FuSE project streams. The IW 2023 goal is to frame the structural relationships, workflows, cadence, and value models to realize the Systems Engineering Vision 2035.

SE Foundations

The SE Foundations stream underpins SE with mathematics, uncertainty quantification, and (physical, social, systems) sciences. The IW 2023 goal is to assess the adequacy of current foundations and ongoing FuSE projects and identify gaps to realize the vision.

SE Methodology

The SE Methodology stream advances practices, methods, and tools for engineering systems to be fit for purpose. The IW 2023 goal is to assess the adequacy of the baseline of current INCOSE technical products, ongoing FuSE projects, and identify gaps to realize the vision.

SE Application Extension

The SE Application Extension stream integrates social sciences and soft systems into systems engineering practice to address grand challenges. The IW 2023 goal is to frame the value model to justify systems engineering having a role at the policy table for these grand challenges.

Description will be adapted based on your feedback

FuSE Stream Description for IW2023 eNote (Proposal Bill)



SE Vision & Roadmap

The Systems Engineering Vision and Roadmap stream drives implementation, integration, assessment, and corrective actions of the Foundations, Methodology, and Application Extensions streams. The streams are interrelated and concurrently guide and influence each other. The IW 2023 goal is to frame the structural relationships, workflows, cadence, and value models to realize the vision.

SE Foundations

The SE Foundations stream rigorously underpins the engineering of systems at the scale, interrelatedness, complexity, non-determinism, and emerging technology innovations based on mathematics, uncertainty quantification, and (physical, social, systems) sciences. The IW 2023 goal is to assess the adequacy of current foundations and ongoing FuSE projects and identify gaps to realize the vision.

SE Methodology

The SE Methodology stream advances practices, methods, and tools for engineering systems to be fit for purpose at the scale, interrelatedness, complexity, non-determinism, and emerging technology innovations. The IW 2023 goal is to assess the adequacy of the baseline of current INCOSE technical products, ongoing FuSE projects in this stream and identify gaps to realize the vision.

SE Application Extension

The SE Application Extension stream integrates social sciences and soft systems into systems engineering practice to address grand challenges to meet human and societal needs such as the United Nations Sustainable Development Goals and the Smart Cities initiative. The IW 2023 goal is to frame the value model to justify systems engineering's role at the policy table for these grand challenges.

Description will be adapted based on your feedback

FuSE Stream Description for IW2023

Workshop documentation



FuSE Stream Description for IW2023 Social Media



SE Vision & Roadmap	SE Foundations	SE Methodology	SE Application Extension
The SE Vision and Roadmap stream drives implementation, integration, assessment, and corrective actions of the FuSE project streams. The IW 2023 goal is to frame the structural relationships, workflows, cadence, and value models to realize the Systems Engineering Vision 2035.	The SE Foundations stream underpins SE with mathematics, uncertainty quantification, and (physical, social, systems) sciences. The IW 2023 goal is to assess the adequacy of current foundations and ongoing FuSE projects and identify gaps to realize the vision.	The SE Methodology stream advances practices, methods, and tools for engineering systems to be fit for purpose. The IW 2023 goal is to assess the adequacy of the baseline of current INCOSE technical products, ongoing FuSE projects, and identify gaps to realize the vision.	The SE Application Extension stream integrates social sciences and soft systems into systems engineering practice to address grand challenges. The IW 2023 goal is to frame the value model to justify systems engineering having a role at the policy table for these grand challenges.

FuSE Stream Description for IW2023 eNote



SE Vision & Roadmap	SE Foundations	SE Methodology	SE Application Extension
The Systems Engineering Vision and Roadmap stream drives implementation, integration, assessment, and corrective actions of the Foundations, Methodology, and Application Extensions streams. The streams are interrelated and concurrently guide and influence each other. The IW 2023 goal is to frame the structural relationships, workflows, cadence, and value models to realize the vision.	The SE Foundations stream rigorously underpins the engineering of systems at the scale, interrelatedness, complexity, non-determinism, and emerging technology innovations based on mathematics, uncertainty quantification, and (physical, social, systems) sciences. The IW 2023 goal is to assess the adequacy of current foundations and ongoing FuSE projects and identify gaps to realize the vision.	The SE Methodology stream advances practices, methods, and tools for engineering systems to be fit for purpose at the scale, interrelatedness, complexity, non-determinism, and emerging technology innovations. The IW 2023 goal is to assess the adequacy of the baseline of current INCOSE technical products, ongoing FuSE projects in this stream and identify gaps to realize the vision.	The SE Application Extension stream integrates social sciences and soft systems into systems engineering practice to address grand challenges to meet human and societal needs such as the United Nations Sustainable Development Goals and the Smart Cities initiative. The IW 2023 goal is to frame the value model to justify systems engineering's role at the policy table for these grand challenges.



Feedback	Feedback	Feedback	Feedback
"Living" vision 2035 Strong focus on integrative nature of the stream		Include digital topics The future of SE is digital and model-based	Modeling systems in context Systemic thinking and modeling for the future of SE

Feedback	Feedback	Feedback	Feedback
"Living" vision 2035		Include digital aspects The future of SE is digital and model-based	



The FuSE Program is organized in 4 streams

Feedback



SE Vision & Roadmap

- The vision is a “living” document
- Strong focus on integrative nature of the streams

SE Foundations

- -

SE Methodology

- The future of SE is digital and model based
- In the description there are currently no digital topics included

SE Application Extension

- Especially the application extension stream is supposed to be more inviting
- Stronger link to SE Vision 2023 – Chapter 4: more organizations use SE and SE is more applicable to societal challenges

The goal is to formulate the FuSE stream description for communication



Possible way to approach:

- Integrate feedback into the stream descriptions (Bill)
- Create a description for the brochure (Bill, Olivier)
- Share update with team (Bill)
- Additional iterations with stream leads (Team)



Also consider:

- Brochure example (provided by Olivier)

Agenda



120'

Key PMO Topics

Organization - Stream Teams
IW Concept
Stream Description

60'

Vision Statement & Role

The vision of the FuSE Program
is defined and the role of the
tea program is clarified

60'

Success Factors

Success Factors of the
FuSE Program and expectations
towards FuSE are identified

30'

Optional: Program Charter

The program
charter is described

30'

Optional: Risk Assessment

High level risks
for program success
are identified and mitigation
measures described



30' Break

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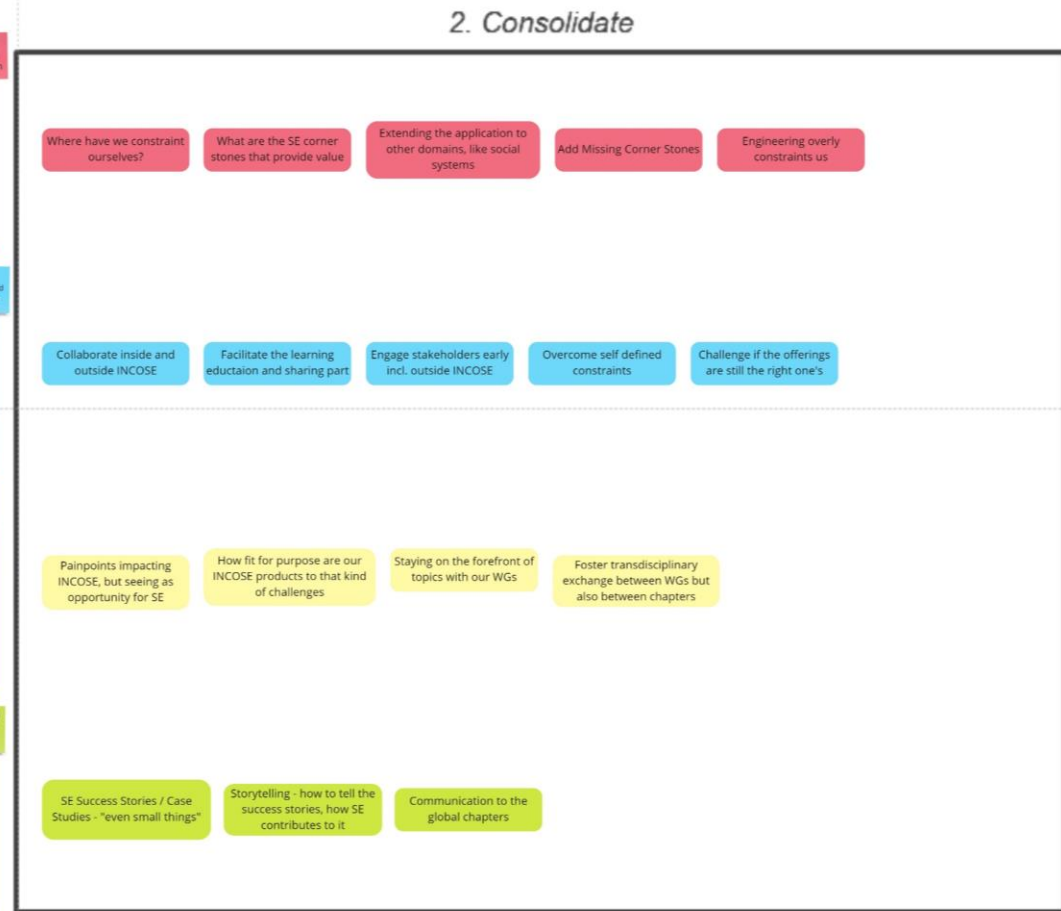
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FuSE Program Vision - Recap







Brainstorming on SE cornerstones:

Key takeaways from Kick-off workshop

Brainstorming

Key Takeaways



SE cornerstones

- Multi-disciplinarity
- Trans-disciplinarity
- Focus on the business value enabled by the process (as opposed to a process-centric mindset)
- really good SE's are also good leaders
- lead with an Integration mindset
- Respect the inputs of SMEs (don't feel like we are the SMEs for everything)
- Systems thinking AND acting
- Embracing diverse stakeholder needs and perspectives
- Explore the solution space - solving the problem right
- Understanding the real needs - solving the right problem
- Traceability
- SoS - dealing with interfaces will be crucial
- focus on the architectural concerns: security, resilience, etc.
- life cycle consideration
- Systems Engineering addresses changing stakeholder needs over the system life cycle.
- Focus on outcomes in the engineering of systems
- Fit for purpose approaches (moving beyond the complicated to the complex)
- SE rigor will remain important forever
- Conscious trade-offs, Optimizing the subsystems most likely suboptimizes the system
- Embrace the holism of systems (vs product-only mindset)
- we recognize systems are both real and conceptual, and encourage holistic conceptual models
- what does the digital transformation mean to us?
- 15288 - is this the only view of SE that we want to promote and certify?
- Systems engineering integrates engineering and scientific disciplines in an effective manner.

- Extending the application to other domains, like social systems
- Where have we constraint ourselves?
- What are the SE corner stones that provide value
- Add Missing Corner Stones
- Engineering overly constraints us





Brainstorming on INCOSE principles: Key takeaways from Kick-off workshop

Brainstorming

Key Takeaways



INCOSE
principles

- Emphasis on fundamentals
- Systems approach = thinking + engineering (acting)
- Systems of systems (are also systems, but different ...)
- aid in the complicated and complex
- Collaboration across domains
- Collaborative development
- Embracing diverse target audience (domains, global, levels of experience)
- Engage stakeholders early including those outside of INCOSE
- Inclusive approach to development and review
- Integrate with and respect existing efforts
- Expand Collaborative partners
- partner with corporate to broadly certify the workforce
- integration of technology in a wider context
- Lead the way - in vision and execution
- Enable learning and development in pursuit of the vision
- Educate
- life-long learning & sharing
- Professional development and resource center for systems engineers
- maybe these are not as clear as we would like

- Collaborate inside and outside INCOSE
- Facilitate the learning education and sharing part
- Engage stakeholders early incl. outside INCOSE
- Overcome self defined constraints
- Challenge if the offerings are still the right one's



Brainstorming on Trends & Environment:

Key takeaways from Kick-off workshop

Brainstorming

Key Takeaways



Trends & Environment

- Global collaboration / supply chain
- Importance of security, health, and resilience
- Sustainability and equity as critical concerns
- ethics is much more of a product driver
- massive loss of critical thinking in the internet age
- Sustainability! (social, financial, environmental)
- Social aspects key to success
- lots of people are forced to be systems engineers without knowing it
- Develop guides and tool kits for social skills-art of presentations and program evaluation or needs assessments (tools, guides, resources)
- need systems education at all ages
- Velocity
- exponential pace of change
- exponential increase in automation
- Exponential scale of complexity. interactions, uncertainty
- on-line learning, shifts in how we educate
- Need systems education at all ages
- Digital access to resources through AI
- Increasing role of AI/ML
- Digital transformation / model-based everything
- Remote engagement to tools, resources, and collaboration for Global interaction
- Growing stakeholder expectations (capability, safety, scalability, affordability,...)
- Increasing systems awareness (enterprise and social)
- Recognition of non-determinism
- disruptions and fragile systems
- Trustworthiness of systems
- creativity and entrepreneurship
- Continuous SW (i.e. functionality) updates (over the air)
- software is the front-end of everything
- Systems are computer and software centric
- Continuous system evolution vs fixed, long life solutions

- How fit for purpose are our INCOSE products to that kind of challenges
- Staying on the forefront of topics with our WGs
- Pain points impacting INCOSE, but seeing as opportunity for SE
- Foster transdisciplinary exchange between WGs but also between chapters

Brainstorming on User Stories & Needs:

Key takeaways from Kick-off workshop



User Stories & Needs

Brainstorming

- Educate the systems engineer of 2035
- Educate the engineer of 2035 (what level of awareness and how do we achieve it)
- What makes a city smart?
- A systems approach to energy supply
- Effectively using systems principles in pursuit of a UN SDG
- The Nobel prize in bringing the disciplines together
- How does my working group influence FuSE? (a different kind of story)
- designing for resilience
- how can systems be more fundamentally secure?
- physical systems and virtual twins operate together for long-term value
- SE return on investment is measurable and recognized
- headline: adoption of SE practice doubled our sales, need outcome stories not process stories

Key Takeaways

- SE Success Stories / Case Studies - "even small things"
- Storytelling - how to tell the success stories, how SE contributes to it
- Communication to the global chapters

Charter is to Realize the SE Vision



Purpose: Evolve the practice, instruction and perception of SE to:

- 1) Position SE to leverage new technologies in collaboration with allied fields
- 2) Enhance SE's ability to solve the emerging challenges
- 3) Promote SE as essential for achieving success and delivering value

Goal: Create a road map that drives the evolution of SE to:

- 1) Be increasingly *adaptable, evolvable and fit for purpose*
- 2) Account for human abilities, needs as an integral system element and their interactions with a system
- 3) Be more responsive in resolving increasingly challenging societal needs
- 4) Realize and enhance Systems Engineering Vision 2025 & 2035 and other visionary inputs

Scope: Identify the needs, priorities and means for transforming SE including:

- 1) Underlying foundations, systems theory, and principles
- 2) People, methods, tools, processes, education and training
- 3) The future social and ethical duties, contributions, and responsibilities of future systems engineers





FuSE Program Vision - Proposal



FuSE Program Vision Workshop documentation



FuSE Program Vision

This is our vision our Goals



The FuSE Program paves the way to reach the INCOSE SE Vision 2035



Break up boundaries and unleash new potential



Widen the network and branch out to new partners, promoters, and recipients



Foster the INCOSE community and leverage its capabilities across the globe



Share success and drive education



Feedback

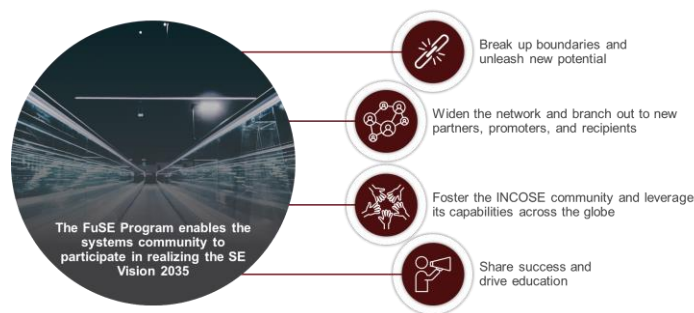
Focus on SE Vision 2035	How to get there (Vision 2035)	How to overcome program roadblocks	Transition to a new way of working and thinking	Implementing the vision	Current state is a snapshot
Current state is a moving target	Need to be the foundation of Engineering	Need to be the foundation of Engineering	Significant obstacles that are already overcome		

Holistic aspects on the right side	SE recognized	Program vision is a snapshot	Program vision is a snapshot	Realizing the vision	Making the vision real
program vision	more like goals not vision	SE vision is accomplished	Transition to a new way of working and thinking	Implementing the vision	Guard the reach of INCOSE

Influencers of engineering					



FuSE Program Vision Feedback



Feedback

- This is not a vision but Goals
- Focus on SE Vision 2035
- How to get there (vision 2035)
- How can we achieve that start from chapter 4 go backwards
- Evolution of the vision, what is missing, what needs to be adapted
- Ecosystem is not static but very dynamic, we have to understand the dynamic and derive the impact on SE
- Current state is a snapshot
- Current state is a moving target
- Have to be the influencer of Engineering
- Involve the community, make use of the competencies
- Significant obstacles that we have to overcome
- Holistic aspects on the right side
- SE recognized
- what would be the future state when the program is accomplished
- Program Vision has to deal with the SE vision
- Facilitating the enablement of the vision
- Making the vision real
- program vision
- more like goals not vision
- SE Vision is accomplished
- Connected to a network of people that
- Expand the reach of INCOSE
- Enable the SE Community to participate / realize the vision
- Influencers of engineering
- Enable "whomever" (the systems community) to participate in reaching the Vision
- Is FuSE only focusing on the Vision 2035?
- no static vision but dynamic
- test against vision --> "moving" target
- Continuous validation that we are going in the right direction
- Facilitating the enablement of the Vision 2035
- "Making the vision real"
- What are the roadblocks
- Holistic targets
- recognized as a whole
- Is it about the INCOSE ppl getting involved?

What is the vision and objectives of the FuSE Program?



Possible way to approach:

- Update the vision (and underlying targets) based on the feedback (Bill, 3DSE)
- Share update with team for another iteration.



Also consider:

- Focus
- Dynamic “moving target”
- Validation
- Enablement
- Holistic
- Roadblocks
- Influencers of Engineering
- Recognize SE
- Realizing
- Involvement

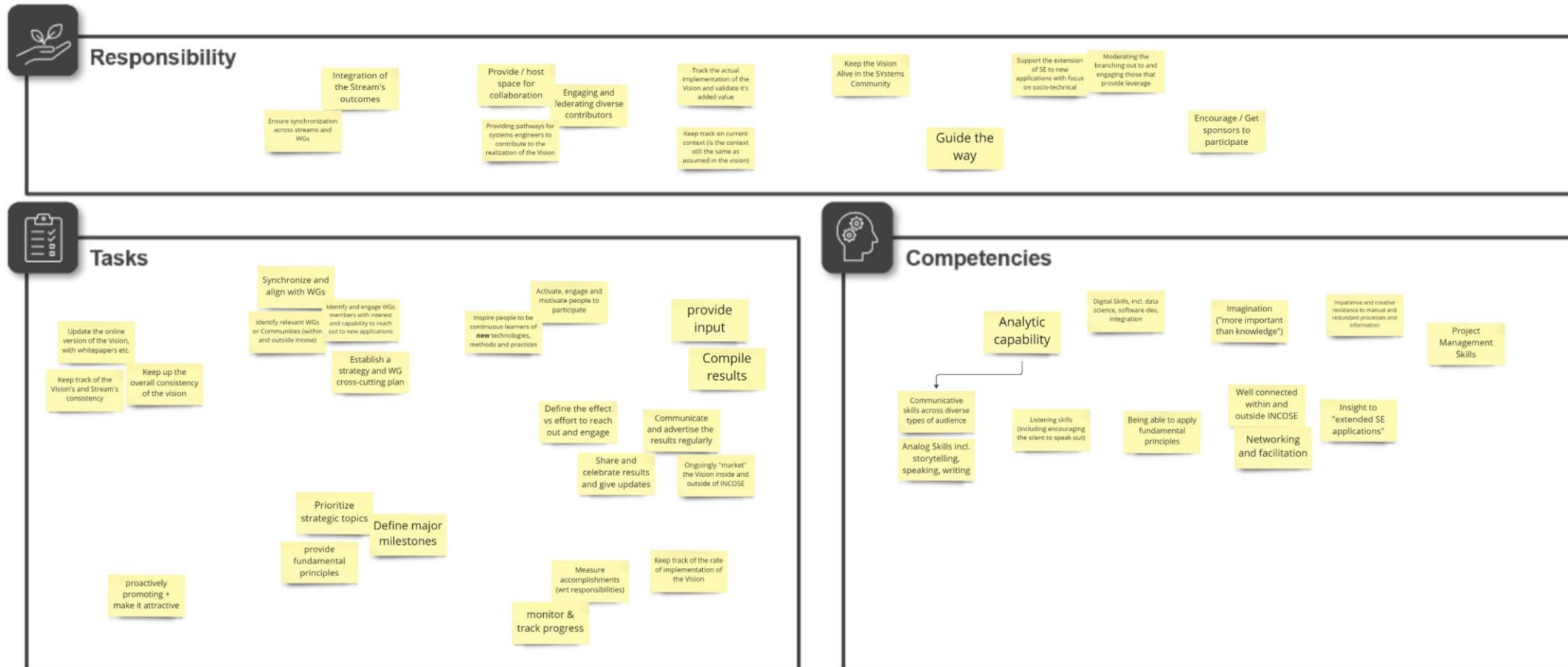


Role of FuSE



What is the role of the FuSE program?

Workshop documentation





What is the role of the FuSE program?



Responsibility

- FuSE orchestrates working groups within INCOSE and enables systems engineers (within INCOSE and outside of INCOSE) to contribute to the realization of the Vision 2035.
- FuSE thereby proactively supports the extension and engagement of SE in different industries (e.g., sociotechnical)
- FuSE ensures that activities are aligned with the Vision while the vision stays consistent and relevant in changing contexts.



Tasks

- Update the SE Vision 2035 and ensure its consistency
- Synchronize communities within (e.g., working groups) and outside INCOSE
- Inspire and motivate people to participate and learn new topics
- Prioritize topics and put them on a roadmap
- Provide fundamental principles
- Proactively promotes the FuSE program
- Shares and communicates results and successes
- Monitors and tracks progress and accomplishments



Competencies

- Networking (within and outside of INCOSE) and facilitation skills
- Communication & story telling
- Listening
- Analytic capabilities
- Digital skills
- Project management capabilities
- Insightful into extended SE applications
- Impatience and creative resistance to manual and redundant processes and information
- Imagination

Agenda



120'

Key PMO Topics

Organization - Stream Teams
IW Concept
Stream Description

60'

Vision Statement & Role

The vision of the FuSE Program
is defined and the role of the
tea program is clarified

60'

Success Factors

Success Factors of the
FuSE Program and expectations
towards FuSE are identified

30'

Optional: Program Charter

The program
charter is described

30'

Optional: Risk Assessment

High level risks
for program success
are identified and mitigation
measures described



30' Break

1

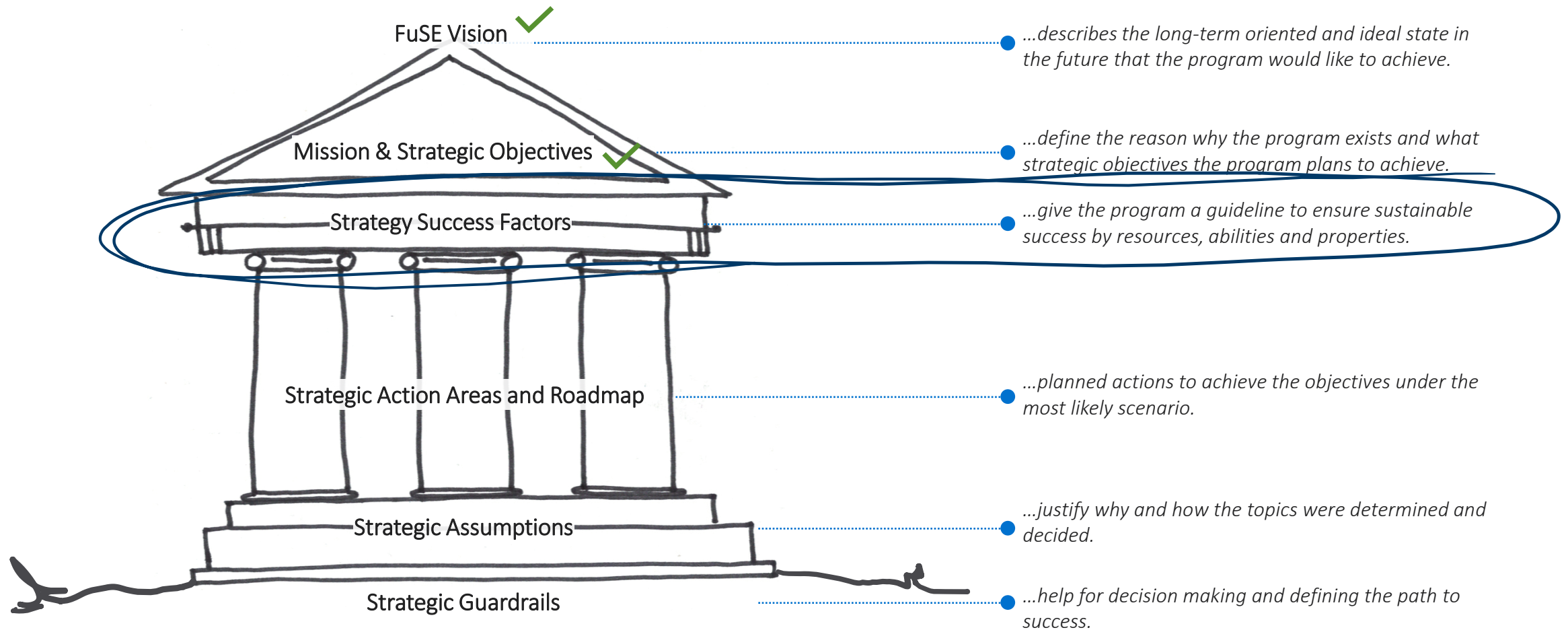
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5

Success factors and the program strategy



What are success factors and why do we identify them?

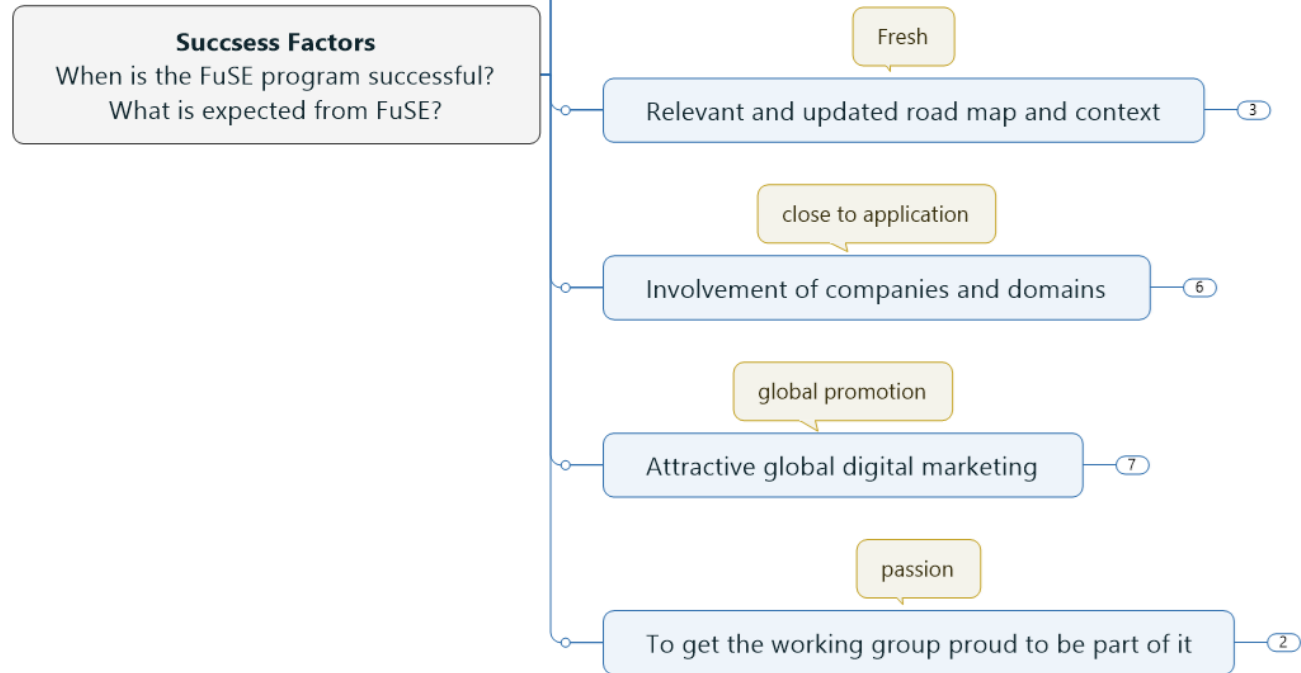


- Success Factors describe what is needed to make the FuSE program successful.
- The awareness of possible success factors for target fulfillment helps focusing the activities on what needs to be done.
- Later in the process we can assess the solutions concepts based on the defined success factors.
- **Internal Success Factors:** When is the FuSE program successful?
- **External Success Factors:** What is expected from FuSE?



Success Factors

Workshop documentation



See attached html file for details – FuSE Success Factors



7 success factors for the FuSE program





What are the FuSE Success Factors



Possible way to approach:

- Are the success factors understandable for you and capture the essence of FuSE?
- Are the success factors covering the entirety of FuSE
- Do some success factors need to be split up?

Next discussion in baselining workshop

Also consider:

- Internal and external success factors
- How to make the success factors measurable?
- Success Factor “Check-list”



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