

FuSE Workshop

after the game is before the game

Agenda.

Proactive FuSE-driven Deliverables

Based on

- FuSE Roadmap 2023 (as derived from SE Vision)
 - Fit for Future Evaluation (as derived from SE Vision)
 - SE Vision 2035 feedback from Vision & Roadmaps session
 - Key insights from FuSE working sessions at IW / Mini-Events / EMEA WSEC (Homework!)
-

Iteration on WG mapping

Based on identified deliverables

FuSE KPIs

- Identification of success levers and indicators
 - Definition of KPIs to measure and monitor the FuSE success
-

Optional: PMO Tasks

Check-in

Owl-o-meter

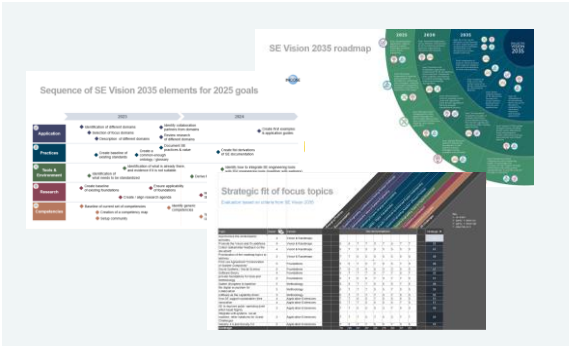
How are you feeling today?



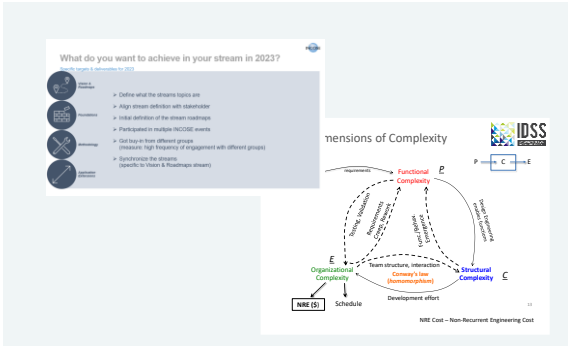
FuSE Deliverables.

Approach

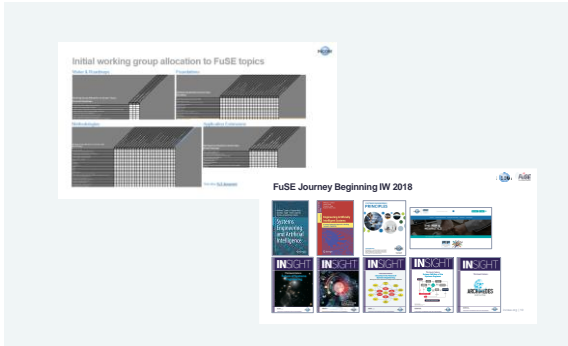
Based on diverse sources, FuSE is now focusing on generating deliverables & artifacts.



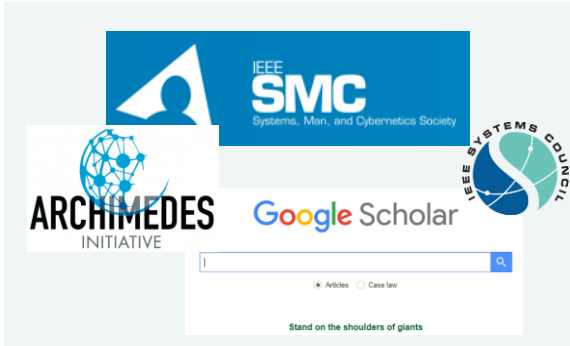
INCOSE Systems Engineering Vision 2035



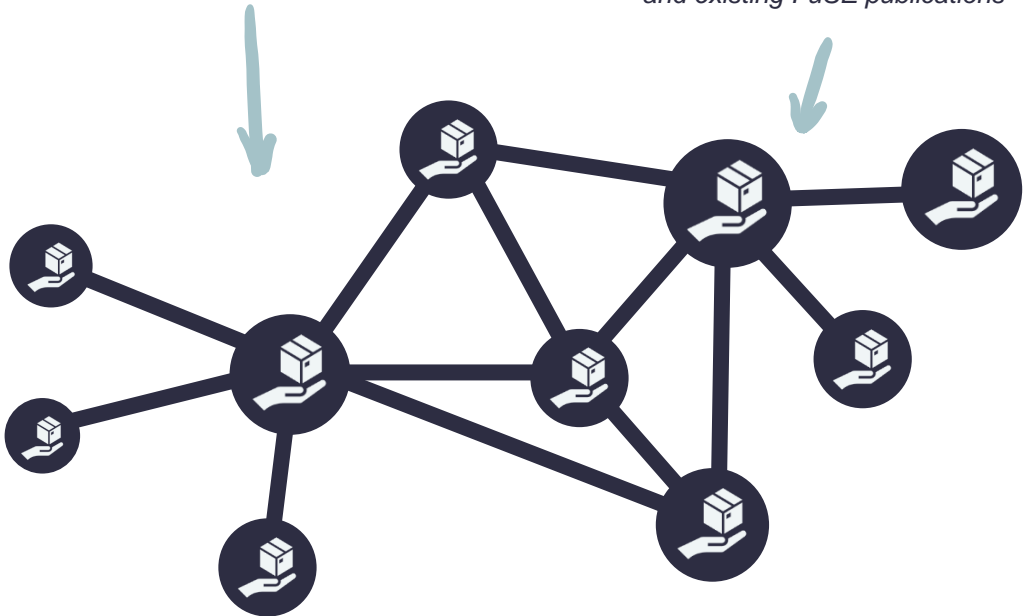
Individual interests of the Streams



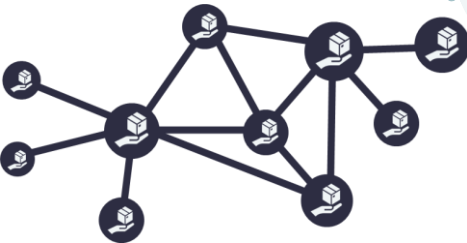
INCOSE working groups, technical products, and existing FuSE publications



External organizations, initiatives, and research, etc.



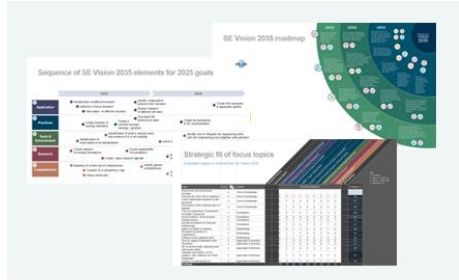
The goal is to get specific on the deliverables FuSE wants to generate (and collect)



Deliverable	Format	Stream	Partner (e.g., WG)	Timeframe	Next action	Responsible
Literature Research on System Complexity	Whitepaper	Foundations	Systems Science Working Group	End of 2023	Exchange with Systems Science WG on this matter	Joshua / Oli
SE Principles White Paper (already available)	Whitepaper	Foundations	SE Principles Team	-	Make whitepaper / Link to whitepaper available on FuSE website.	Bill

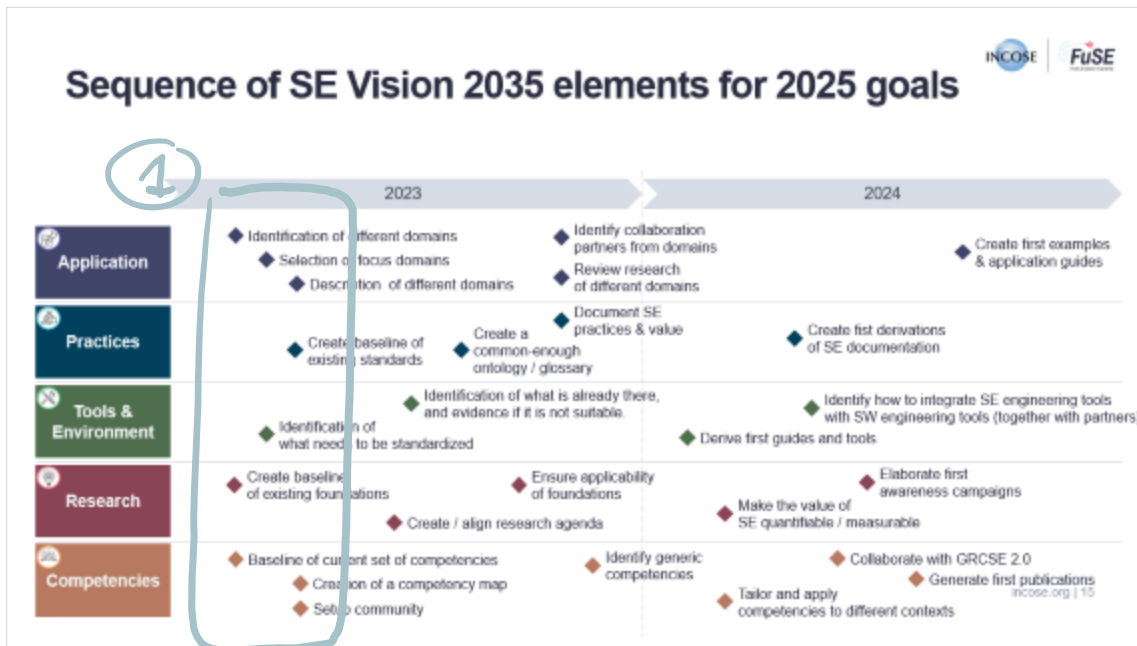
Examples

Getting started: Derive deliverables from SE Vision 2035



Step 1

INCOSE Systems Engineering Vision 2035



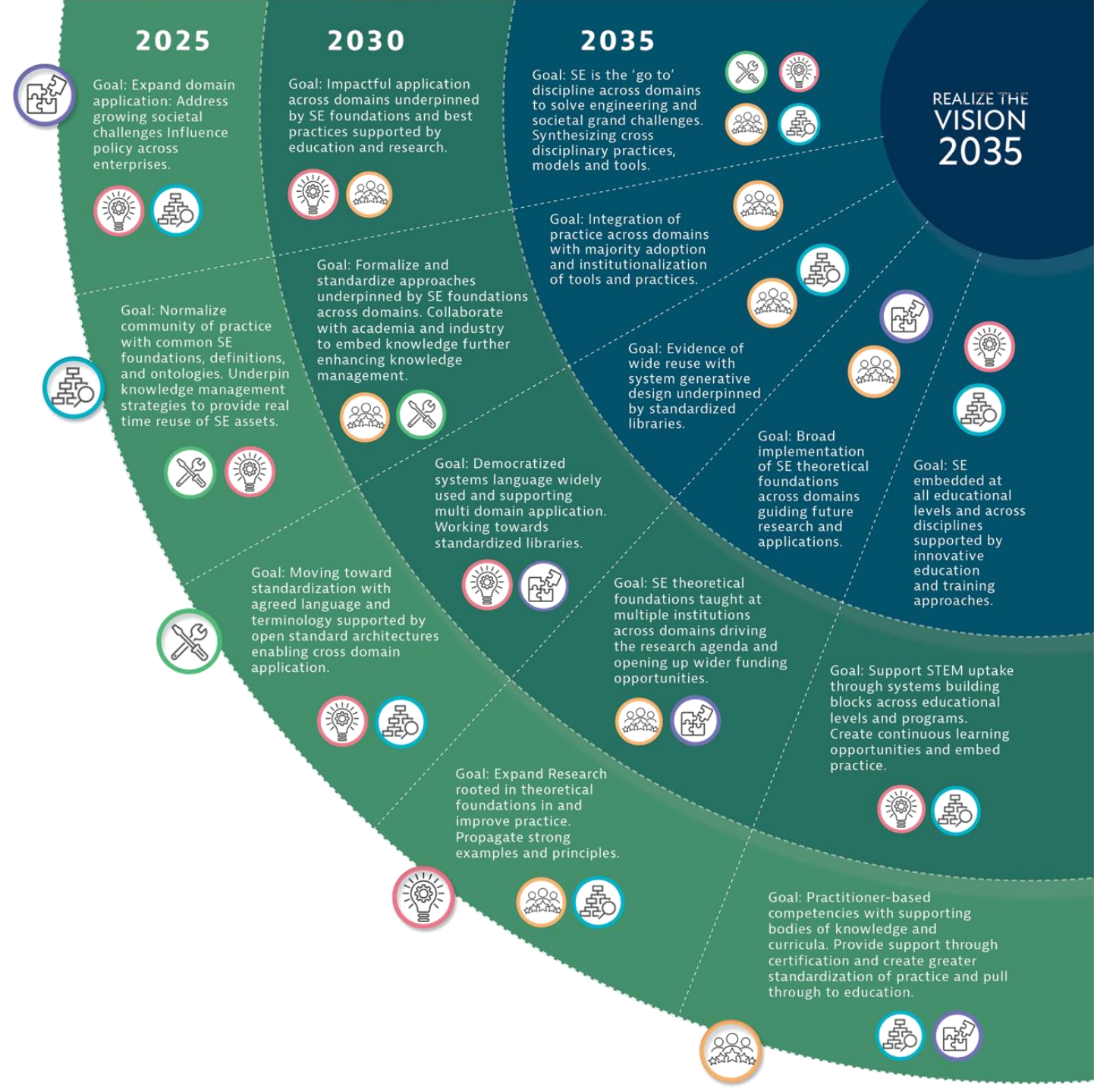
This table shows the strategic fit of focus topics, evaluated based on criteria from SE Vision 2035. A blue circle with the number 1 highlights the 'Strategic fit' column. The table is structured as follows:

Topic	Priority	System	Recommendations	Strategic fit
Synchronize the workstreams' activities	4	Vision & Roadmaps	5 5 7 7 3 7 5 7 7	53
Promote the Vision and it's additions	4	Vision & Roadmaps	5 7 5 5 5 5 5 5 5	47
Collect stakeholder feedback on the document	4	Vision & Roadmaps	7 7 5 5 5 5 5 5 5	49
Prioritization of the roadmap topics to address	3	Vision & Roadmaps	3 5 7 5 7 5 5 7 5	49
Developing common 'SE Vision 2035' of System Complexity	5	Foundations	7 5 3 5 5 3 3 5 5	41
Social Systems / Social Science	5	Foundations	3 7 7 7 5 7 7 5 7	55
Software theory provide foundations for tools and methodology	2	Foundations	3 7 5 5 7 5 7 7 5	51
Gather disruptors to baseline the digital ecosystem for collaboration	5	Methodology	3 5 7 7 5 5 5 7 5	49
Software as the capability driver	3	Methodology	5 7 7 7 7 5 7 5 5	53
How SE support sustainable cities	4	Application Extensions	5 7 7 7 7 5 7 5 5	55
Innovation SE to improve public spending (joint effort Asset Mgmt)	4	Application Extensions	7 7 5 5 5 5 5 7 5	51
Integrate soft-systems, social systems, other initiatives for Grand Challenges	3	Application Extensions	7 7 5 5 5 3 7 5 5	49
Industry 4.0 and Society 5.0	2	Application Extensions	7 5 7 7 5 5 7 5 5	53
Coverage			79 55 91 87 83 75 83 87 81	

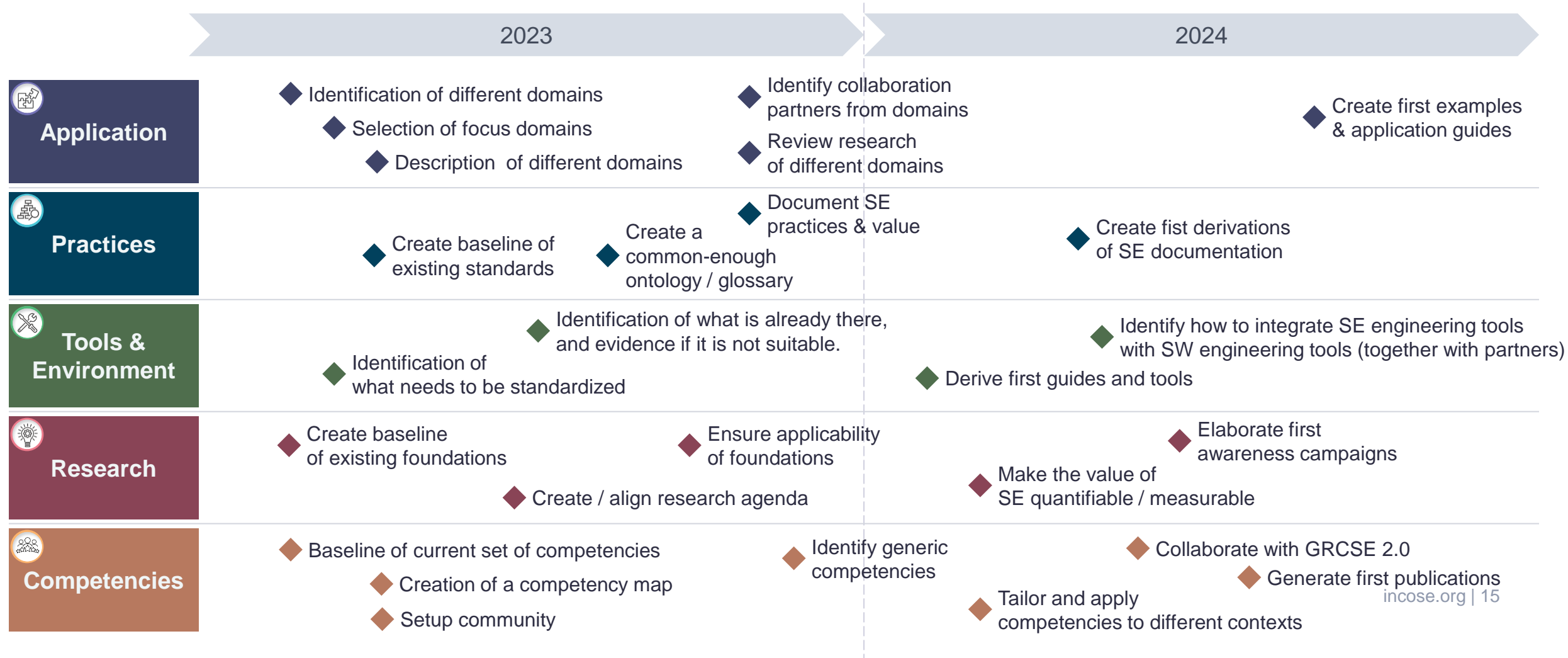
Inputs

SE Vision 2035 roadmap

Roadmap goals 2025




Sequence of SE Vision 2035 elements for 2025 goals



Strategic fit of focus topics

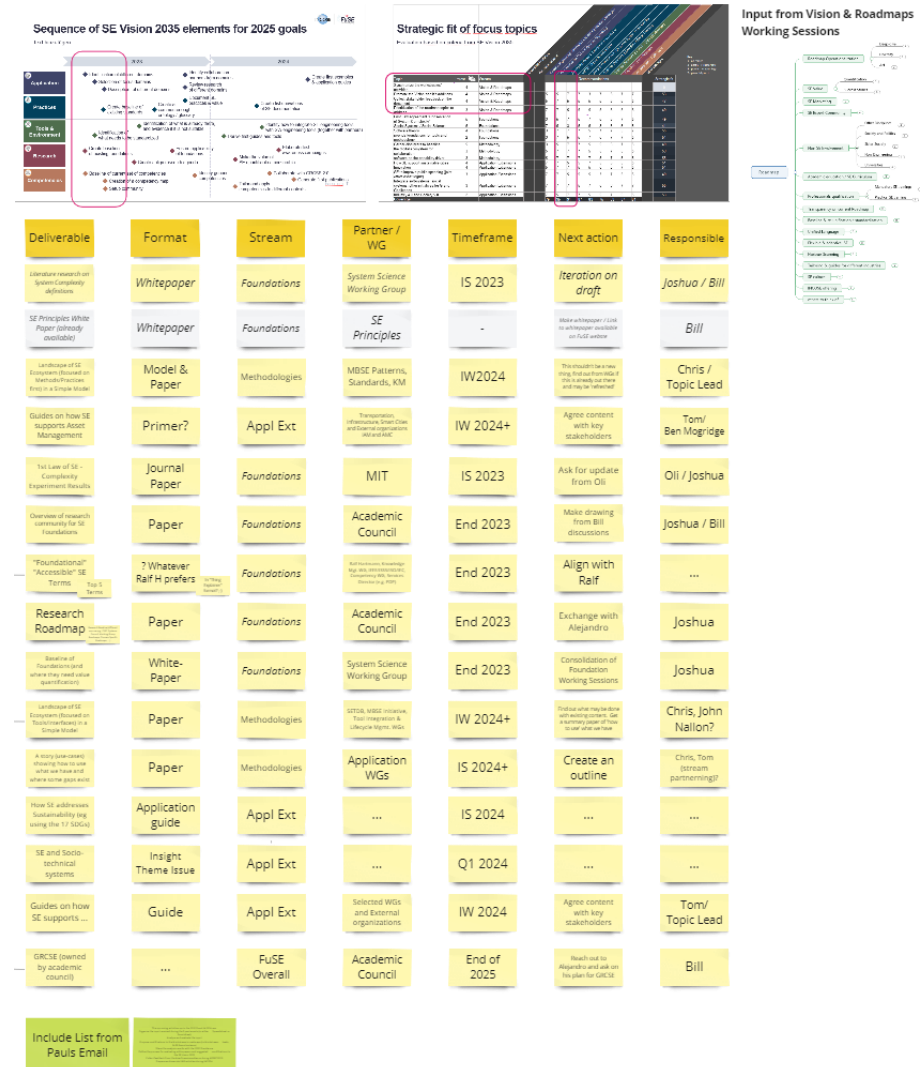
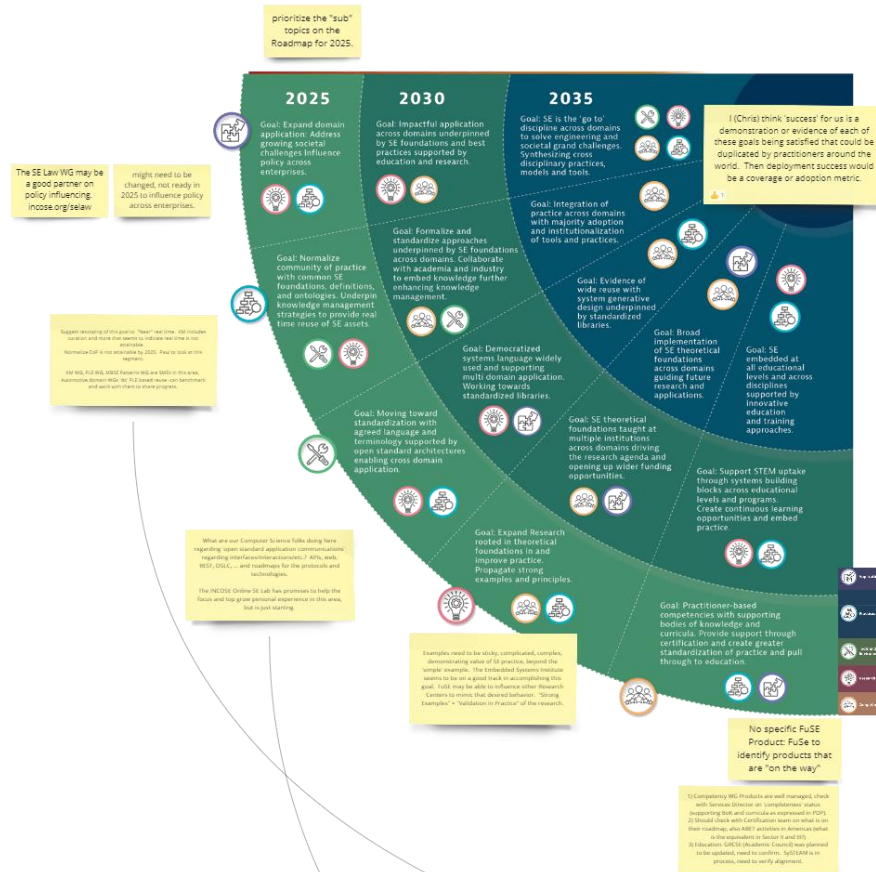
Evaluation based on criteria from SE Vision 2035

Topic	Invest 	Stream	Recommendations												Strategic fit
Synchronize the workstreams' activities	4	Vision & Raodmaps													0
Promote the Vision and it's additions	4	Vision & Raodmaps			5	5	7	7	3	7	5	7	7		53
Collect stakeholder feedback on the document	4	Vision & Raodmaps			5	7	5	5	5	5	5	5	5		47
Prioritization of the roadmap topics to address	3	Vision & Raodmaps			7	7	5	5	5	5	5	5	5		49
First Law Agreement "Conservation of System Complexity"	5	Foundations			3	5	7	5	7	5	5	7	5		49
Social Systems / Social Science	5	Foundations			7	5	3	5	5	3	3	5	5		41
Software theory	4	Foundations			3	7	7	7	5	7	7	5	7		55
provide foundations for tools and methodology	2	Foundations			3	7	5	5	7	5	7	7	5		51
Gather disrupters to baseline	5	Methodology			3	5	7	7	5	5	5	7	5		49
the digital ecosystem for collaboration	3	Methodology			5	7	7	7	5	5	7	5	5		53
software as the capability driver	3	Methodology			5	7	7	7	7	5	7	5	5		55
How SE support sustainable cities	4	Application Extensions			7	7	5	5	7	5	5	5	5		51
Innovation	4	Application Extensions			5	7	7	5	5	5	5	7	5		51
SE to improve public spending (joint effort Asset Mgmt)	3	Application Extensions			7	7	5	5	5	3	7	5	5		49
Integrate soft-systems, social systems, other initiatives for Grand Challenges	3	Application Extensions			7	7	7	5	7	5	3	7	7		55
Industry 4.0 and Society 5.0	2	Application Extensions			7	5	7	7	5	5	7	5	5		53
Coverage					79	95	91	87	83	75	83	87	81		

Key
 1 - no match
 3 - partly --> rather low
 5 - partly --> rather high
 7 - plays fully on it

FuSE Deliverables

FuSE Deliverables | Photo Docu

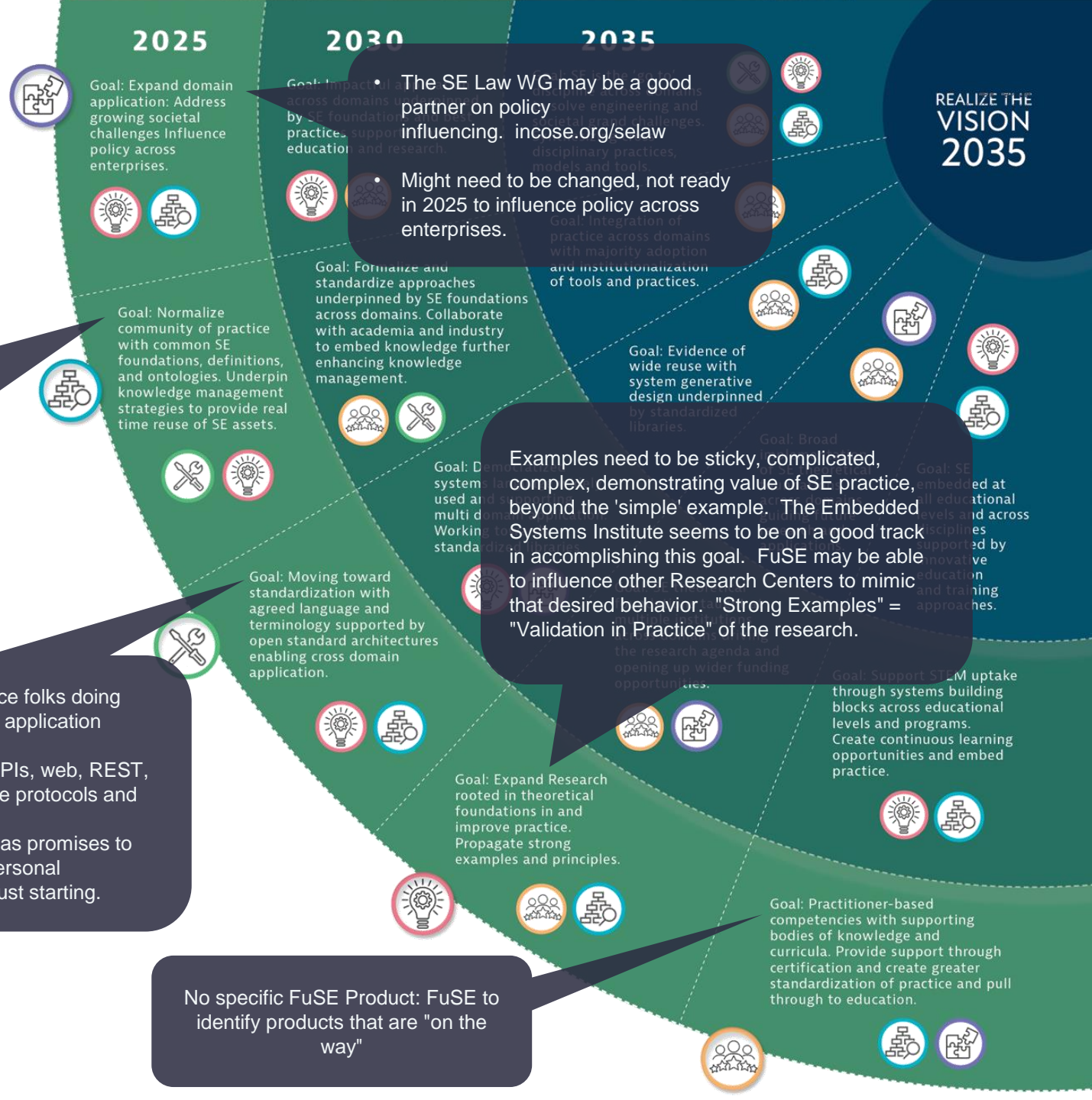


First set of FuSE Products

Deliverable	Format	Stream	Partner/ WG	Timeframe	Next action	Responsible
<i>GRCSE (owned by academic council)</i>	-	FuSE Overall	Academic Council	IW 2026	Reach out to Alejandro and ask on his plan for GRCSE	Bill
<i>Analyze and evaluate feedback to SE Vision Roamap</i>	Documentation	Vision & Roadmaps	-	IS 2023	Consolidation of Inputs	Paul
<i>Define process to evaluate white papers and suggestions to modify SE Vision 2035</i>	Guide	Vision & Roadmaps	-	IW 2024	Consolidate inputs from IW 2023	Paul
<i>Modification of Roadmap</i>	Online SE Vision 2035	Vision & Roadmaps	-	IW 2024	...	Paul
<i>Literature research on System Complexity definitions</i>	Whitepaper	Foundations	System Science Working Group	IS 2023	Iteration on draft	Joshua / Bill
<i>1st Law of SE - Complexity Experiment Results</i>	Journal Paper	Foundations	MIT	IS 2023	Ask for update from Oli	Oli / Joshua
<i>Overview of research community for SE Foundations</i>	Paper	Foundations	Academic Council	IW 2024	Make drawing from Bill discussions	Joshua / Bill
<i>"Foundational" "Accessible" SE Terms - Top 5 Terms</i>	Open	Foundations	Ralf Hartmann, Knowledge Mgt. WG, IEEE/ISSS/ISO/IEC, Competency WG, Services Director (e.g. PDP)	IW 2024	Align with Ralf	...
<i>Research Roadmap - Research Baseline (different sources e.g., CIRC, Systems Council, Working Group Roadmaps, Domain Specific Roadmaps....)</i>	Paper	Foundations	Academic Council	IW 2024	Exchange with Alejandro	Joshua
<i>Baseline of Foundations (and where they need value quantification)</i>	White-Paper	Foundations	System Science Working Group	IW 2024	Consolidation of Foundation Working Sessions	Joshua
<i>Landscape of SE Ecosystem (focused on Methods/Practices first) in a Simple Model</i>	Model & Paper	Methodologies	MBSE Patterns, Standards, KM	IW 2024	This shouldn't be a new thing, find out from WGs if this is already out there and may be 'refreshed'	Chris / Topic Lead
<i>Landscape of SE Ecosystem (focused on Tools/Interfaces) in a Simple Model</i>	Paper	Methodologies	SETDB, MBSE Initiative, Tool Integration & Lifecycle Mgmt. WGs	IW 2024+	Find out what may be done with existing content. Get a summary paper of 'how to use' what we have	Chris, John Nallon?
<i>A story (use-cases) showing how to use what we have and where some gaps exist</i>	Paper	Methodologies	Application WGs	IS 2024+	Create an outline	Chris, Tom (stream partnering)?
<i>Guides on how SE supports Asset Management</i>	Primer	Application Extensions	Transportation, Infrastructure, Smart Cities and External organizations IAM and AMC	IW 2024+	Agree content with key stakeholders	Tom / Ben Mogridge
<i>How SE addresses Sustainability (eg using the 17 SDGs)</i>	Application guide	Application Extensions	...	IS 2024
<i>SE and Socio-technical systems</i>	Insight Theme Issue	Application Extensions	...	Q1 2024
<i>Guides on how SE supports ...</i>	Guide	Application Extensions	Selected WGs and External organizations	IW 2024	Agree content with key stakeholders	Tom / Topic Lead

Feedback on 2025 Goals

SE Vision 2035 Roadmap



Suggest rescoping of this goal to "Near" real time. KM includes curation and more that seems to indicate real time is not attainable. Normalize CoP is not attainable by 2025.

KM WG, PLE WG, MBSE Patterns WG are SMEs in this area. Automotive domain WGs 'do' PLE based reuse -can benchmark and work with them to share progress.

What are our Computer Science folks doing here regarding 'open standard application communications' regarding interfaces/interactions/etc.? APIs, web, REST, OSLC, ... and roadmaps for the protocols and technologies. The INCOSE Online SE Lab has promises to help the focus and top grow personal experience in this area but is just starting.

prioritize the "sub" topics on the Roadmap for 2025.

No specific FuSE Product: FuSE to identify products that are "on the way"

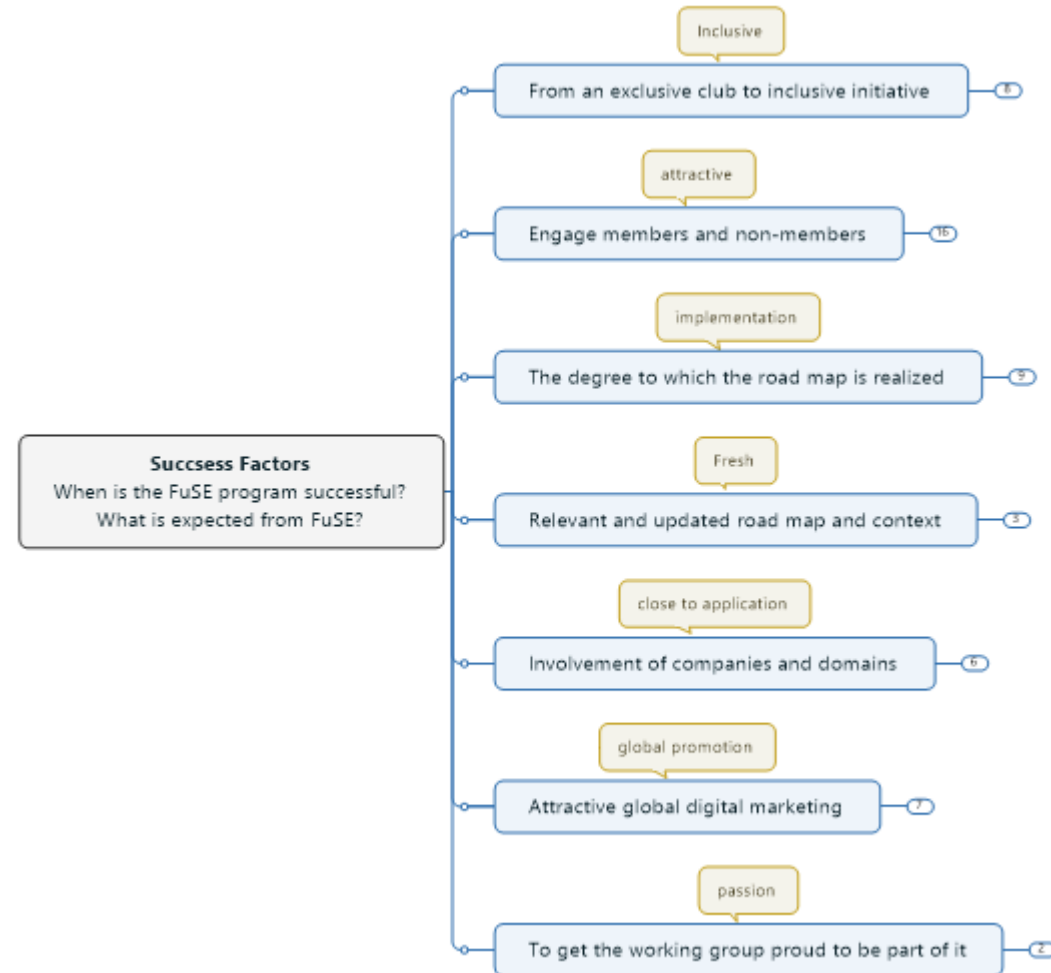
The SE Law WG may be a good partner on policy influencing. incose.org/selaw
Might need to be changed, not ready in 2025 to influence policy across enterprises.

Examples need to be sticky, complicated, complex, demonstrating value of SE practice, beyond the 'simple' example. The Embedded Systems Institute seems to be on a good track in accomplishing this goal. FuSE may be able to influence other Research Centers to mimic that desired behavior. "Strong Examples" = "Validation in Practice" of the research.

FuSE KPIs

Recap

In the Calibration Workshop we identified 7 success factors for the FuSE Program



7 success factors for the FuSE program



Levers & Indicators

Definition of Levers & Indicators

Levers are specific actions or strategies that are implemented to influence or impact the success factors. They serve as the means to bring about desired changes or improvements in a given situation.

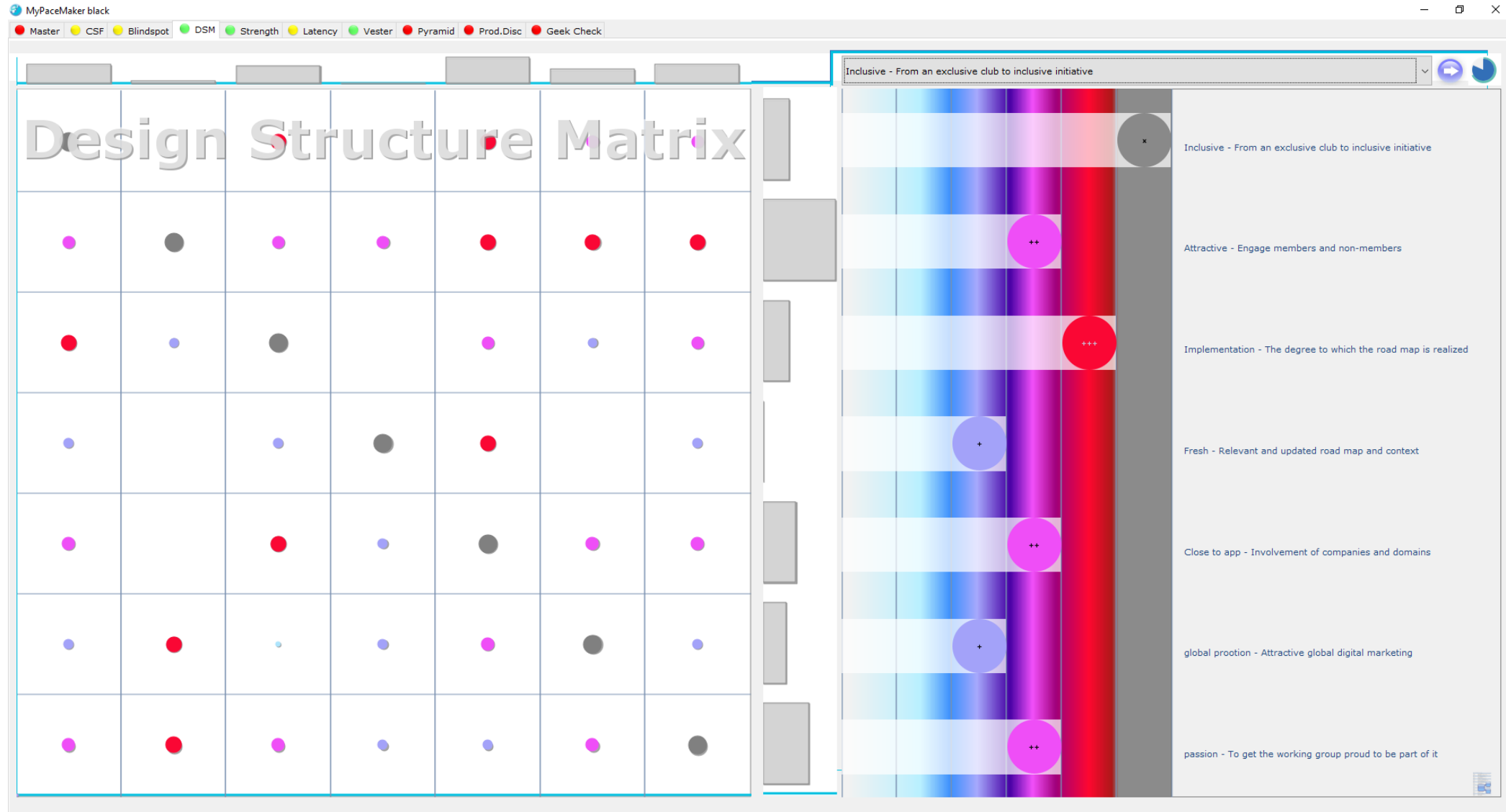
To ensure program success it is best if the levers can be influenced by the program itself.

Indicators, on the other hand, are measurable parameters or metrics that are used to assess and track the progress or achievement of the success factors. They provide quantifiable evidence or data that indicates whether the desired outcomes or objectives are being met.

Overall, levers and indicators in the Innovation Cell methodology provide a systematic approach to identify and implement actions while monitoring and evaluating the effectiveness of those actions in relation to the success factors.



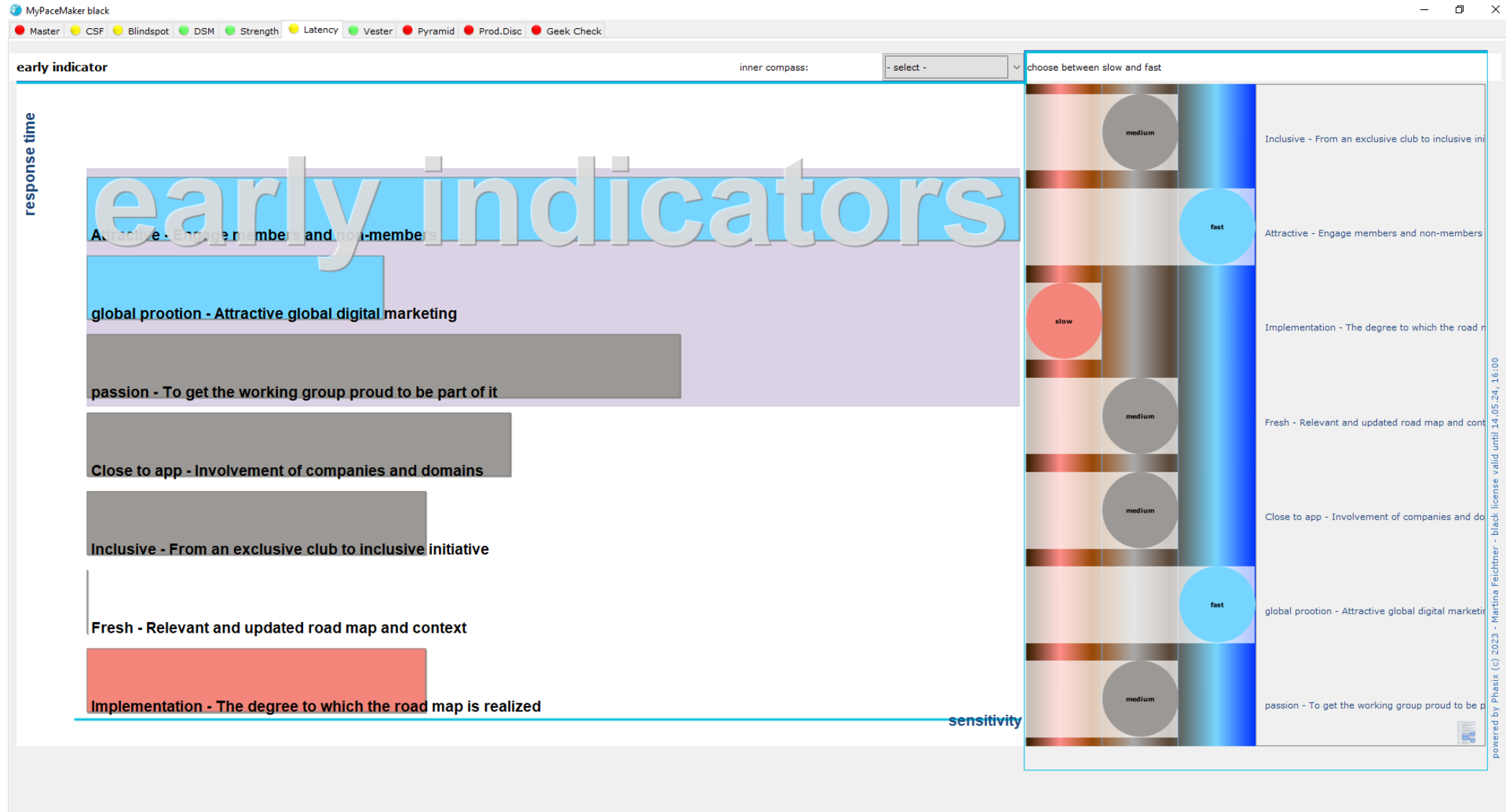
Identification of Levers & Indicators



System levers of the FuSE Program



Early indicators of the FuSE Program



Let's connect.

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