

MoSSEC GPDIS 2023 MBSE Workshop



Kyle Hall – Airbus Commercial Aircraft

John Nallon – INCOSE TIMLM WG Chair

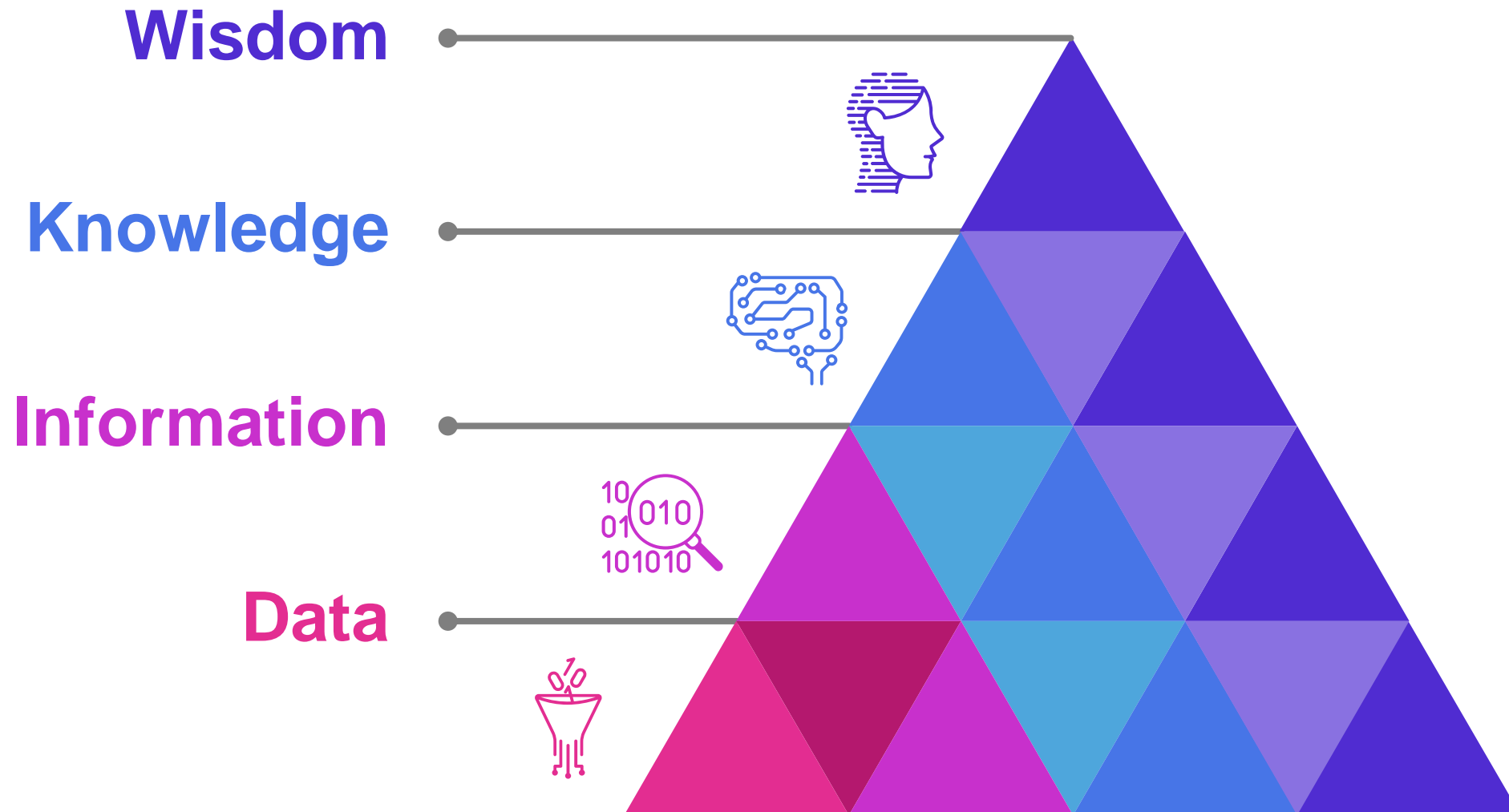
Gregory Pollari – INCOSE TIMLM WG Co-chair

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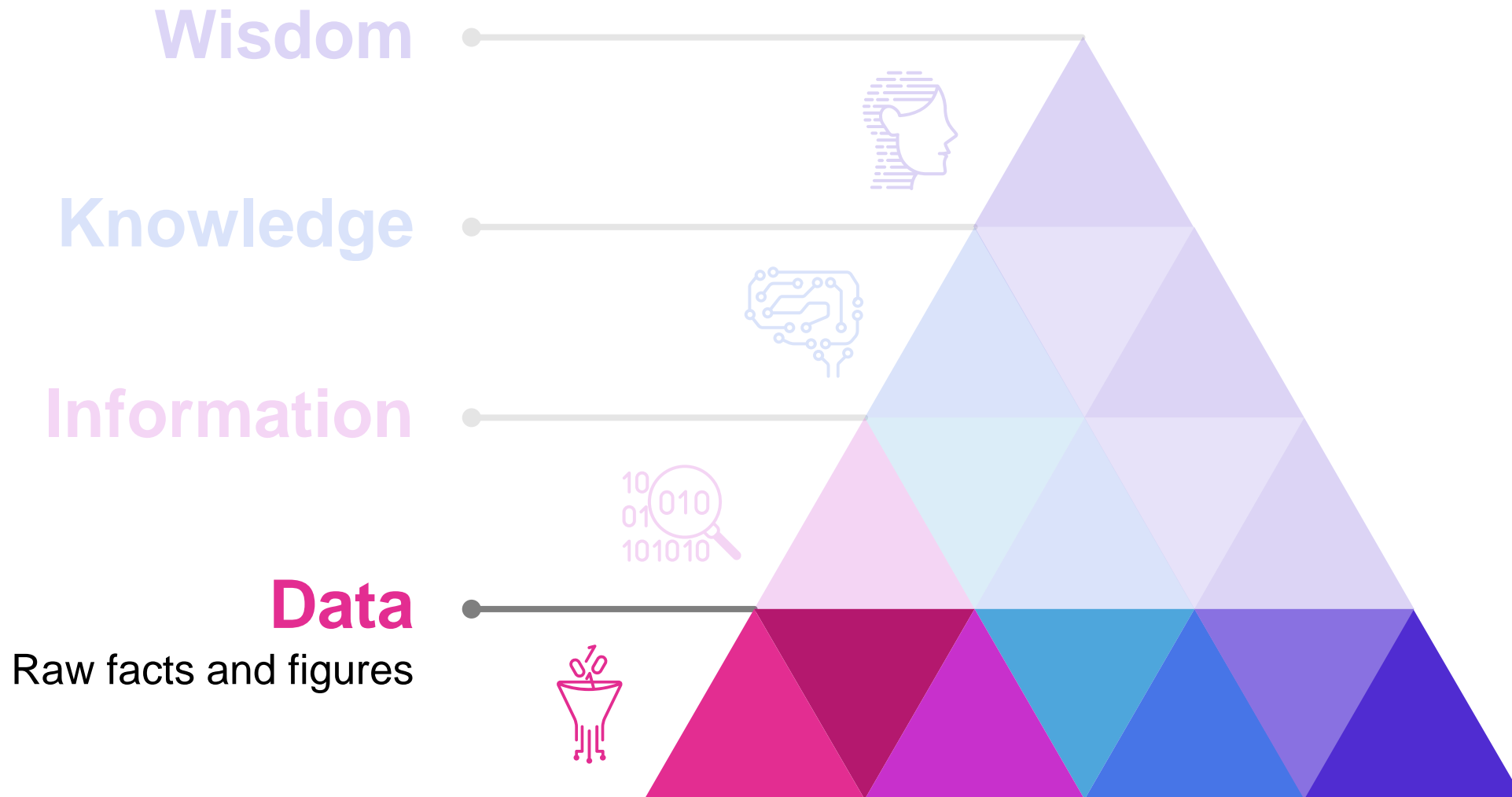
Introducing MoSSEC – The DIKW Pyramid (presented at GPDIS 2022)

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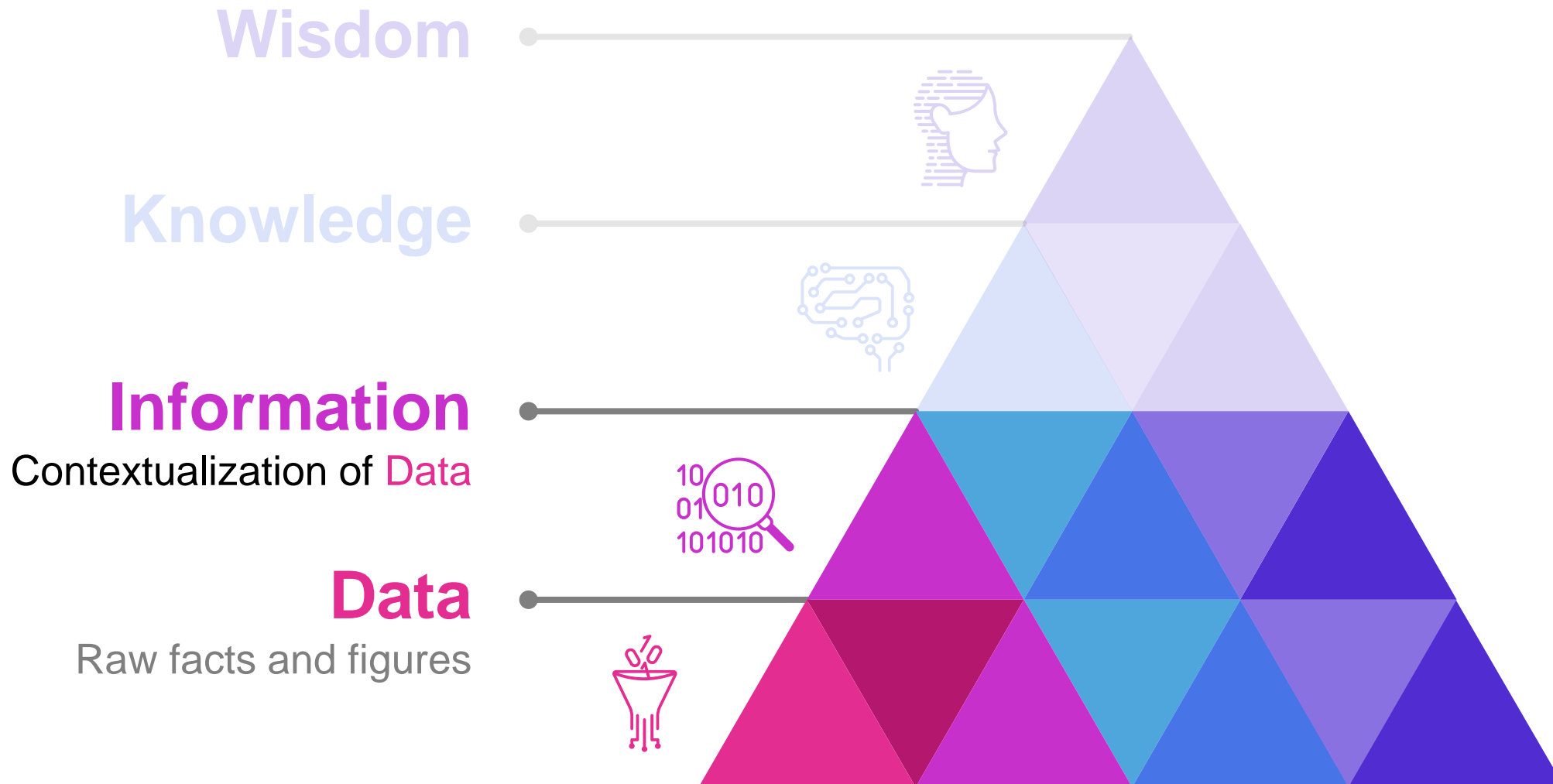
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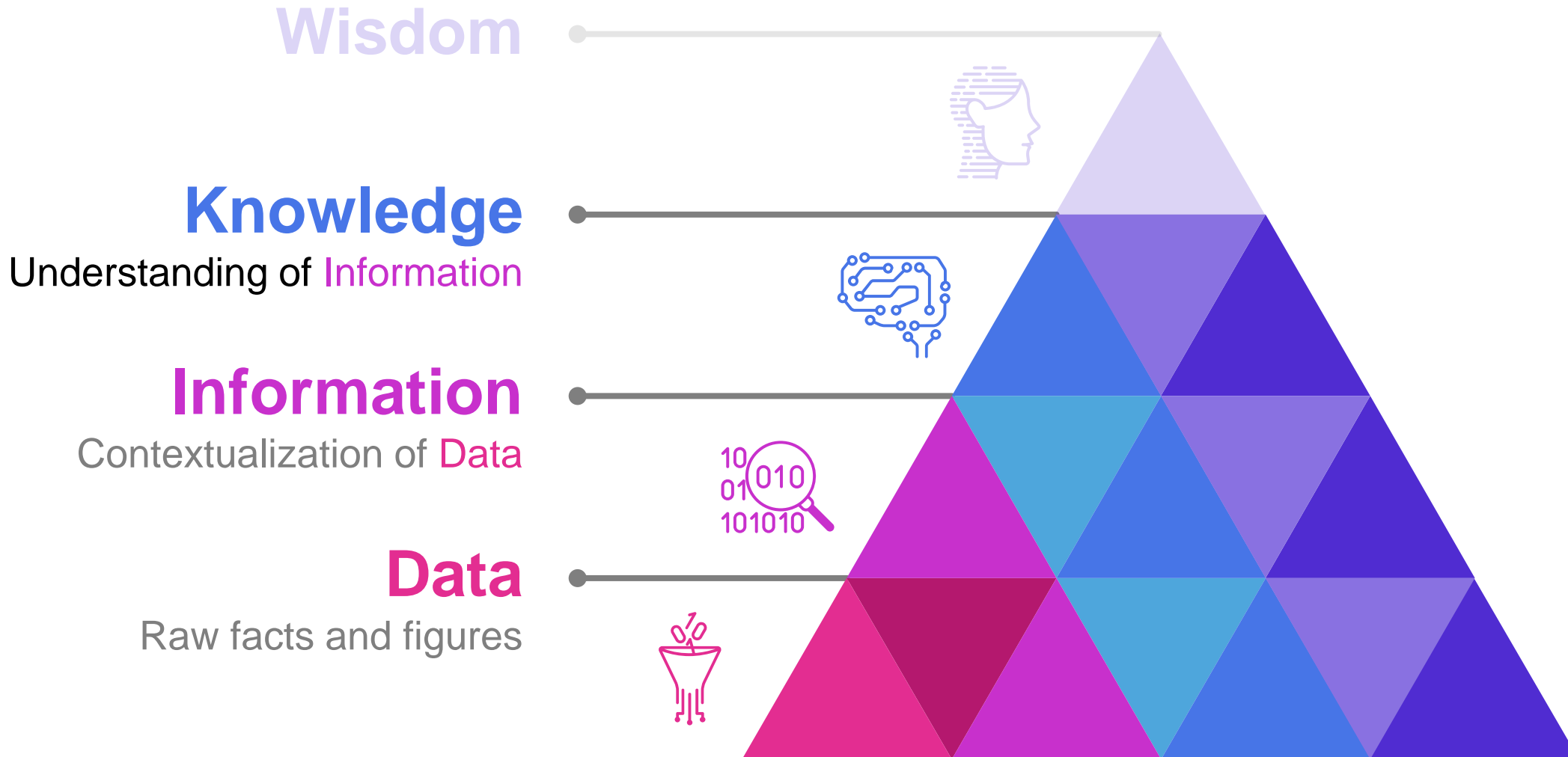
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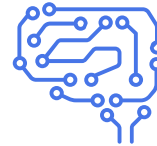
Wisdom

Application of Knowledge



Knowledge

Understanding of Information



Information

Contextualization of Data



Data

Raw facts and figures



Engineering companies working on **complex products** don't have the tools to effectively manage MDAO studies **across organisations and domains**; we are losing valuable knowledge and wasting money and time.

So what do we need?

Contextual metadata to track and manage the study across multiple domains, organisations and partners in multiple countries. Adopting the ISO standard for this is **crucial** for industry alignment.

MoSSEC stands for Modelling and Simulation information in a collaborative Systems Engineering Context.

Introducing MoSSEC – Modelling and Simulation information in a collaborative Systems Engineering Context

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“**MoSSEC** enables the connection of Modelling and Simulation capabilities, supporting MDAO across an organization, and their Extended Enterprise, following a robust, archivable and accessible ISO methodology.”

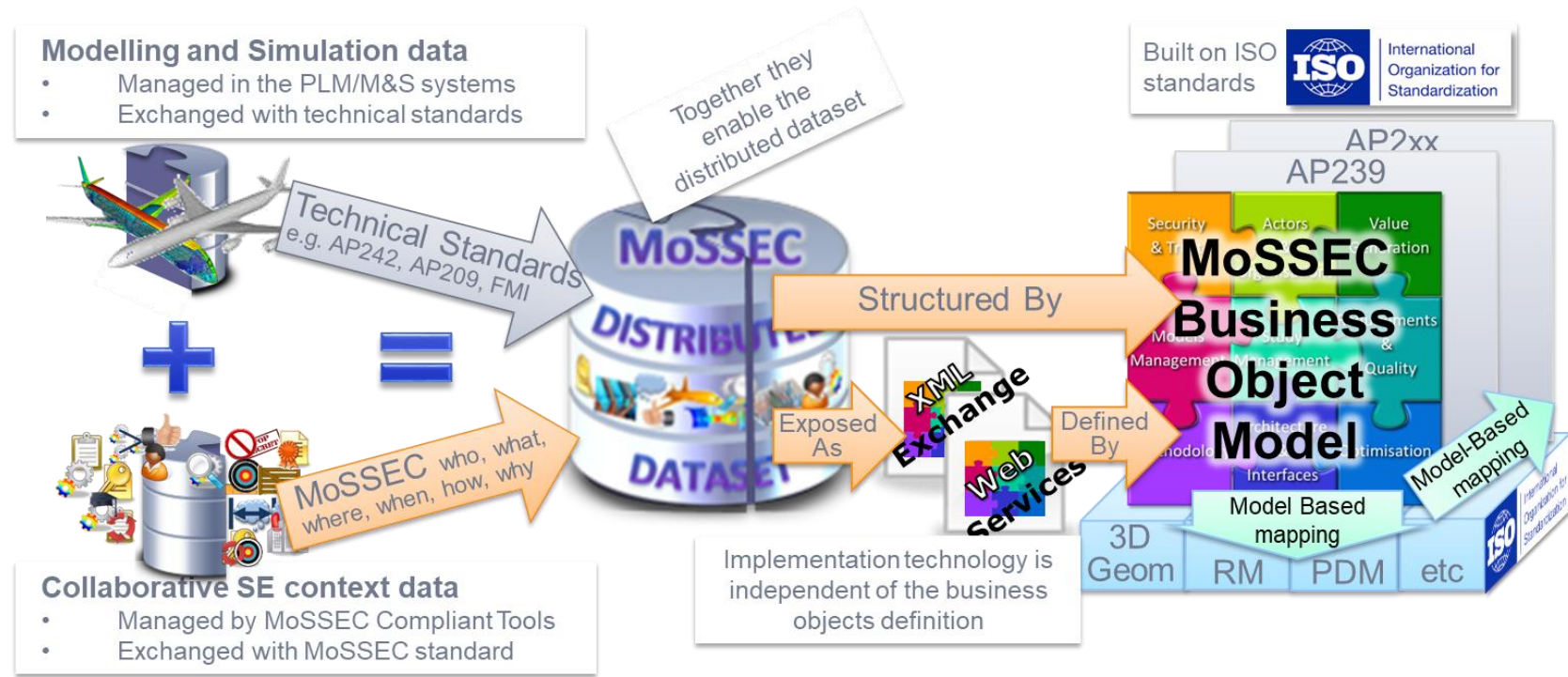


Introducing MoSSEC – Product Lifecycle Management solutions and MoSSEC (presented at GPDIS 2022)

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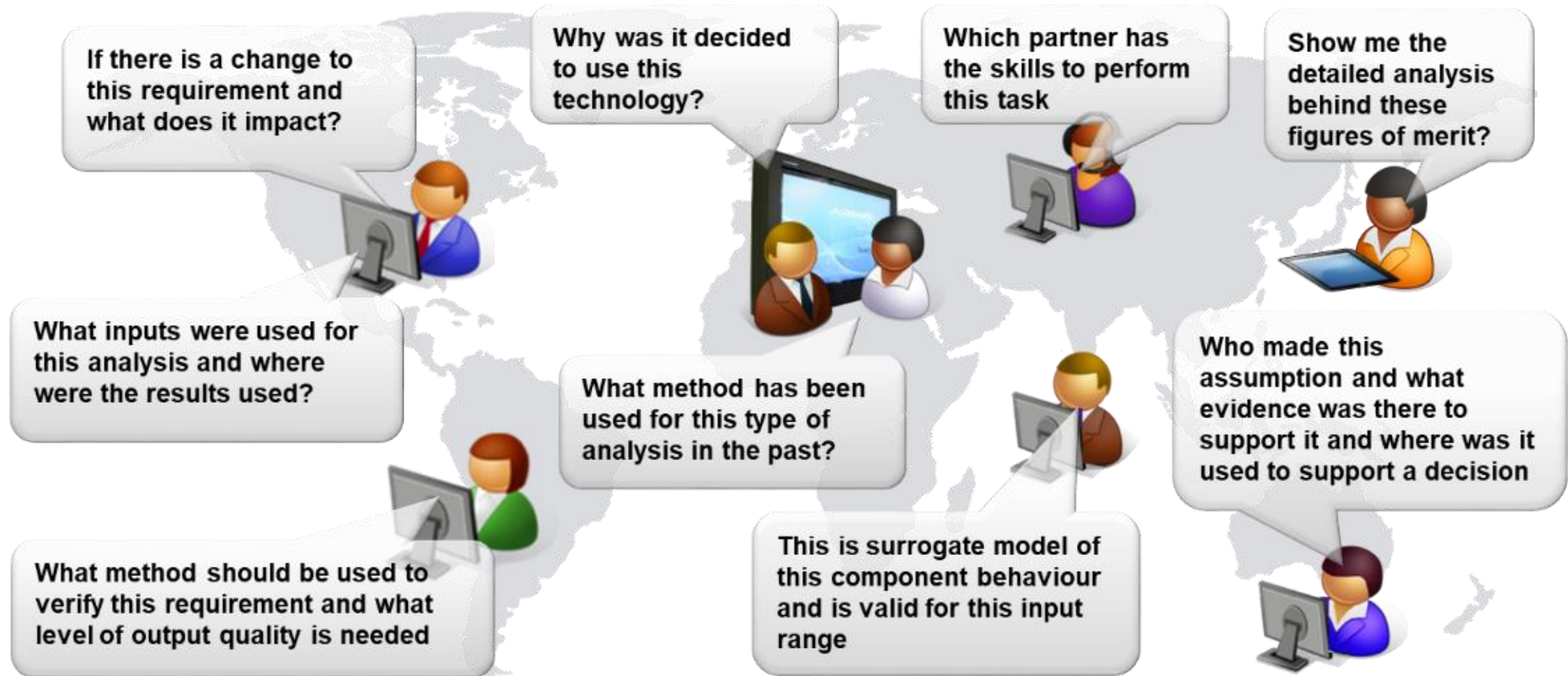
MoSSEC is the complementary standard to existing technical M&S standards capturing collaborative SE context data.

Combining the **technical data** with its **context** provides the MoSSEC Distributed Dataset or a “150% model”, to which queries can then be made.



Introducing MoSSEC – Typical questions where the information comes from multiple domains (presented at GPDIS 2022)

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Outlining the scenario [1/2]

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- We will be simulating a preliminary procurement engagement between an OEM and a potential Tier 1 Supplier.
- The key is to understand the needs of your stakeholders in the relationship
 - The OEM and Supplier both want to ensure their interests are prioritised to produce the best product.
- Break into 6 groups

[Team 1]

[Team 2]

[Team 3]

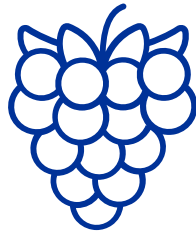
[Team 4]

[Team 5]

[Team 6]

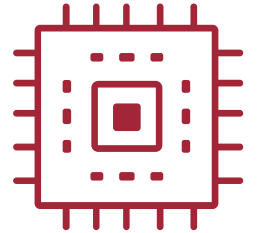
A smartphone OEM needs to procure custom Silicon for their latest device

GRAPE SYSTEMS



- [Team 1] – OEM Management
- [Team 2] – OEM Design
- [Team 3] – OEM Manufacturing

SILICON TECHNOLOGIES



- [Team 4] – Supplier Management
- [Team 5] – Supplier Design
- [Team 6] – Supplier Manufacturing

Part 1 – Identifying your needs and requirements [1/2]

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- Each team must work independently to identify the **information** they need to contribute effectively to the joint collaboration project – information may be needed from another team within your business.
- Identify from each **information** request what the **context data** and **technical data** could be.
- Try to identify the team(s) who will provide the **context data** and **technical data** for each **information** request.
- Time for task: **15 minutes**

Part 1 – Identifying your needs and requirements [2/2]

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Typical expectations of each domain

[Team 1] – OEM Management

What information do you need to know prior/after authorization? (operational roles, schedule, cost, status, etc.)

[Team 2] – OEM Design

What information do you need to know before you try to share a model or analyze a supplier's model? (requirements authority, V&V methods, model types, model inventory, model boundaries, metadata requirements, etc.)

[Team 3] – OEM Manufacturing

What information do you need to know from the Supplier before work begins, and when should data be received? (model types, model inventory, fabrication sources, qualification plans, test plans, etc.)

[Team 4] – Supplier Management

What information do you need to know...? (requirements source, schedule, support/warranty requirements, etc.)

[Team 5] – Supplier Design

What information do you need to know...? (requirements sources, modeling tool requirements, metadata format, collaboration environment, change management, etc.)

[Team 6] – Supplier Manufacturing

What information do you need to know...? (qualification requirements, receiving inspection process, tolerances, etc.)

Part 2 – Coordinating your needs with your organisation

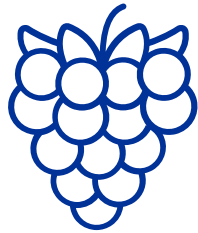
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- Each organisation should now discuss their identified **technical data** and **context data** requests.
- Each organisation should produce a proposed workflow for the collaboration with the partner organisation – **you must not share this with the partner organisation – you are acting blindly on their operations.**
- To simplify the activity, focus on activity flow and not data flow – assume data requests are instantly fulfilled when requested.
- Please document your final workflows on the large templates.
- Time for task: **15 minutes**

Part 3 – Identifying with your partner, what you can provide [1/2]

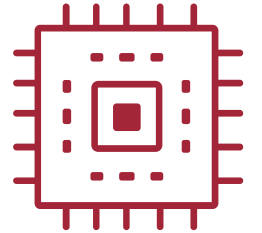
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GRAPE SYSTEMS



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SILICON TECHNOLOGIES



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Part 3 – Identifying with your partner, what you can provide [2/2]

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- Each domain should now be paired with their equivalent for the collaboration.
- Explain to the partner team the requests on their department from your business.
- Each team should then identify the data you will need to provide for effective collaboration.
- Document the **technical data** and **context data** objects **you will share** and who with as a workflow for your team.
- To simplify the activity, assume data is instantly available within your domain.
- Time for task: **15 minutes**

Part 4 – Group Discussion and Questionnaire

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1. What are the challenges and benefits to effective collaboration?
2. Do you perceive missing context as a blocker to effective collaboration? Explain.
3. Could you perform this activity while considering IP protection?
4. How would you improve this collaboration process?
5. How would you rate the effectiveness of this workshop? How could we improve?

MoSSEC

Standardised context to unlock
robust digital continuity



Kyle Hall – Airbus Commercial Aircraft

Jonathan Taylor – Airbus Commercial Aircraft

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Connect heterogeneous Modelling and Simulation capabilities with versionable referenceable MoSSEC data management

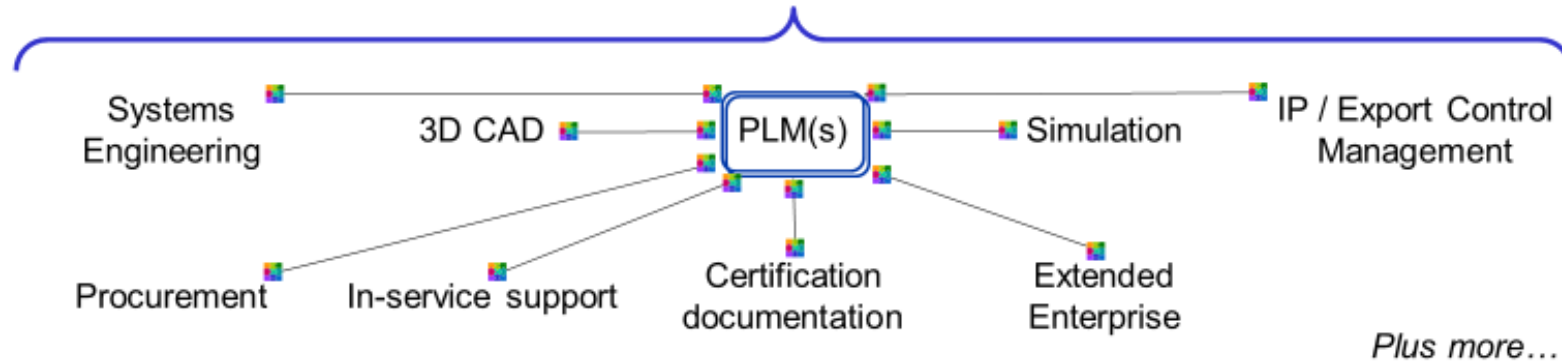
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COST SAVINGS



REDUCED TIME TO MARKET



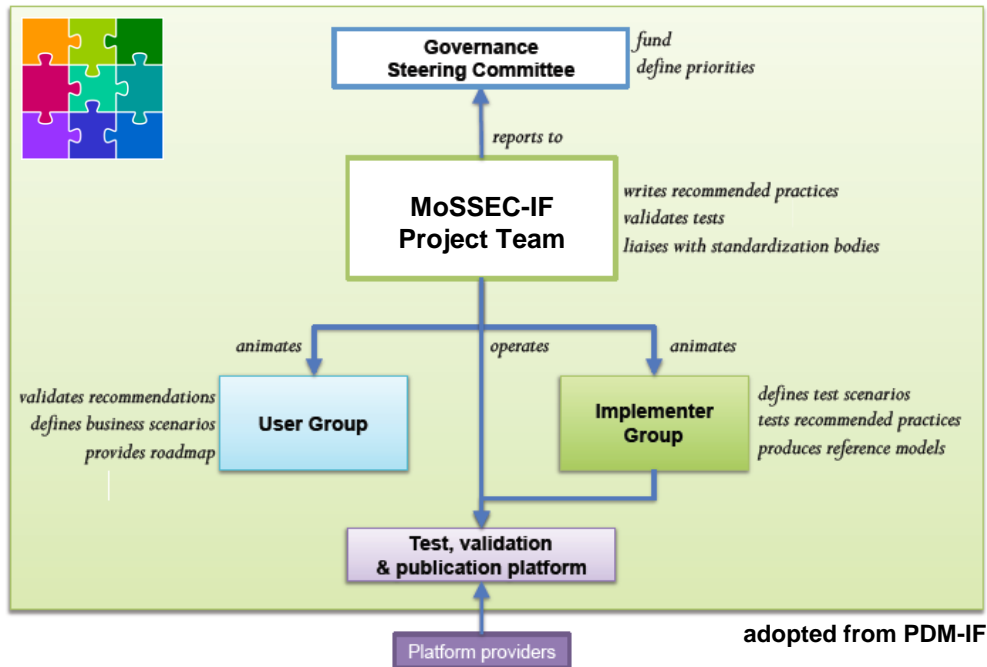
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6. Would you be interested in attending the MoSSEC presentation on Wednesday?

The MoSSEC Implementation Forum

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- Need for IF collaboration and publication spaces.
- Proposal to integrate publications and developments through:
Tool Integration and Model Lifecycle Management (TIMLM) INCOSE Working Group
- Yearly workshops at INCOSE IW with MoSSEC-IF International Workshop #1 planned for INCOSE IW 2024.
- Integration sought between standardization bodies (support through NIST, SAE, ISO, etc.)
- Promote MoSSEC as a standard for use in collaboration frameworks such as MOSA.
- Promote the production of a MoSSEC vocabulary for OSLC.

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7. Would you be interested in joining the MoSSEC Implementation Forum?
If so please leave your details with the event organisers!

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