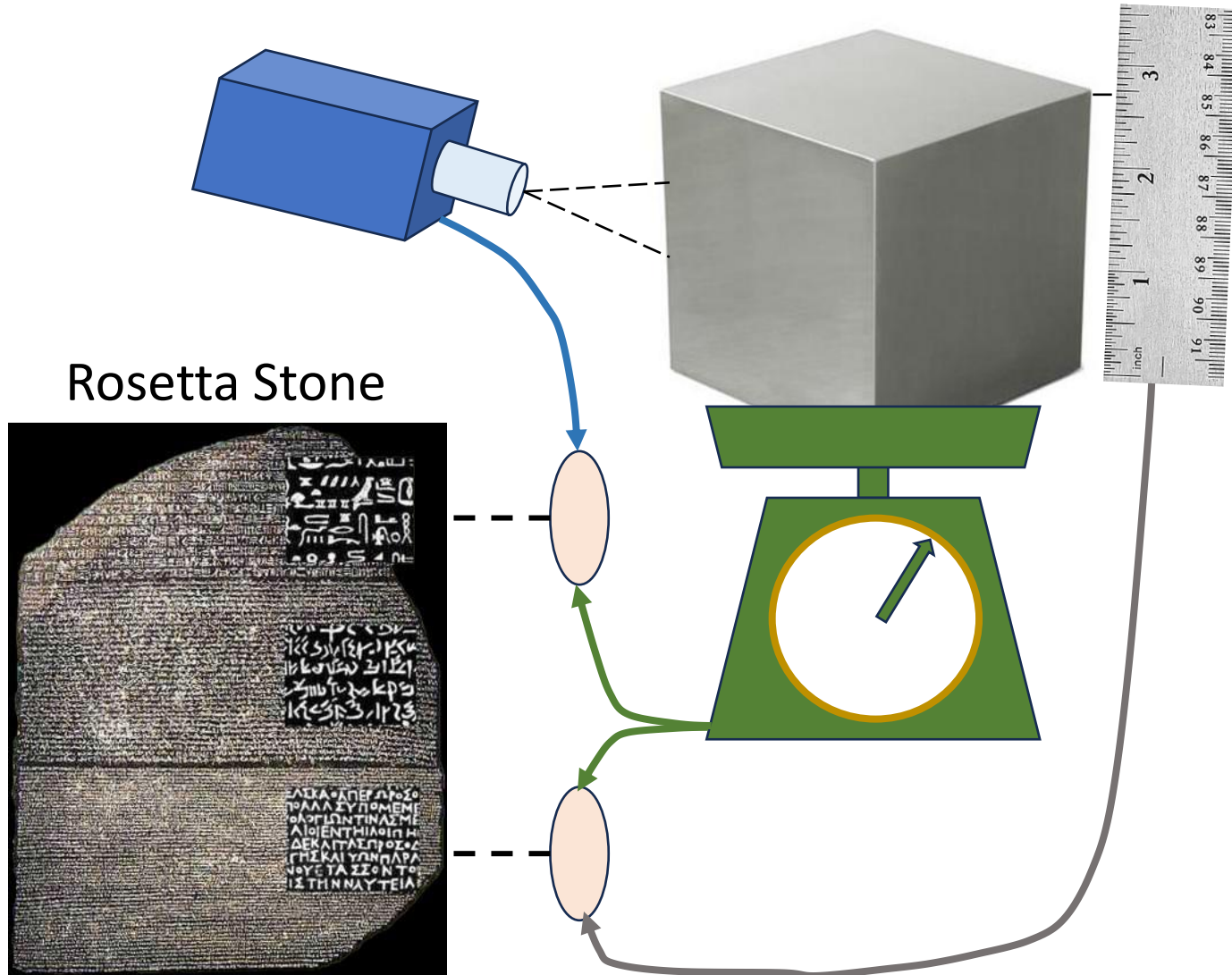


The Cross-Societies Rosetta Stone Project: Mapping Consistency Confirmation Frameworks of Different Communities



Phase 2 Project—
Goals, Planning, Outreach

Contents

- Purpose and scope
- Background
- Potential goals for Phase 2
- Preliminary issues for discussion
- Planning next steps
- Discussion
- References

Purpose and scope

- The following is a planning discussion for Phase 2 of the Rosetta Stone Project, building on the initial Rosetta Stone Project of 2024.
- The current version is for discussion with the team members contributing to Phase 1, prior to outreach invitation to other participants for Phase 2.
- In addition to (mostly) providing Phase 1 background, this version is limited to a brief discussion of potential Phase 2 goals, along with some questions to be addressed in planning Phase 2.
- Based on initial discussion by the interested parties, a more complete description of a Phase 2 plan will follow.

Background: The Rosetta Stone Project (2024)

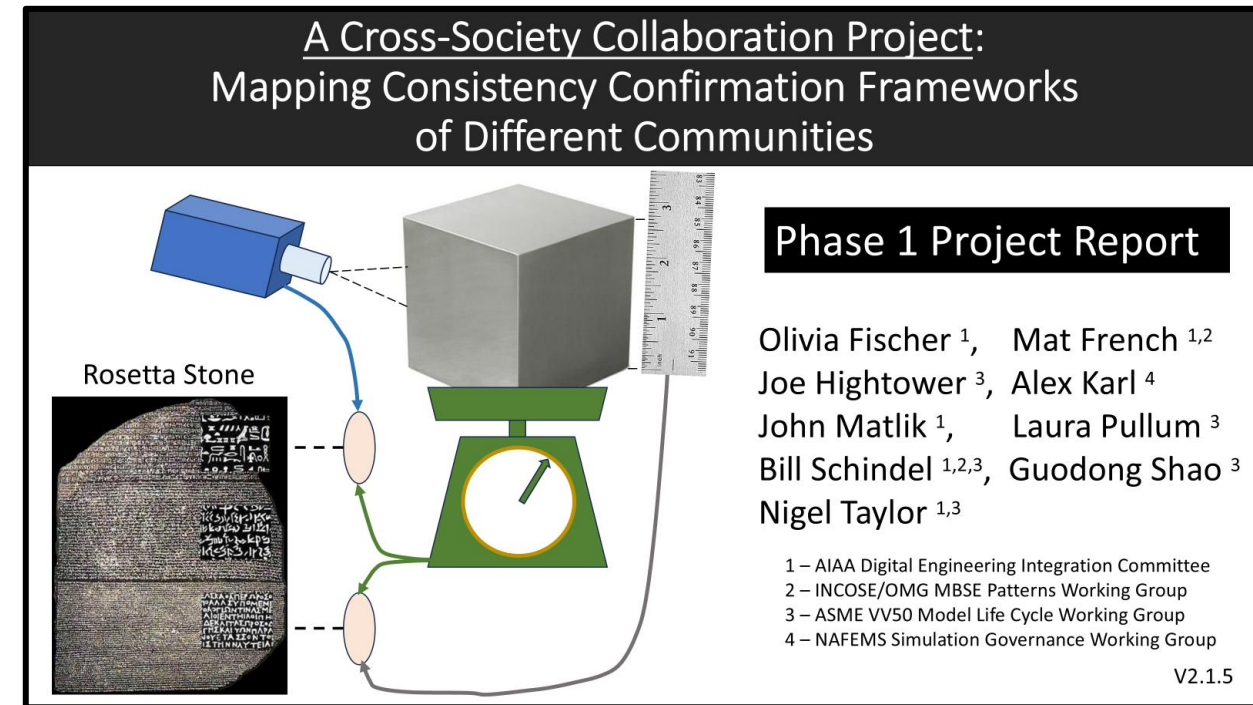
The Rosetta Stone Project Report (2025) provided mappings between:

- Three Verification and Validation (V&V) standards [3, 4, 5] for computational models ;

Compared to/mapped to . . .

- A standard [6] describing V&V of engineered systems.

[1] Mapped {
[3] ASME VVUQ 1-2022
[4] AIAA G-077-1998
[5] NAFEMS ESQMS 2020
[6] ISO/IEC/IEEE 15288-2023

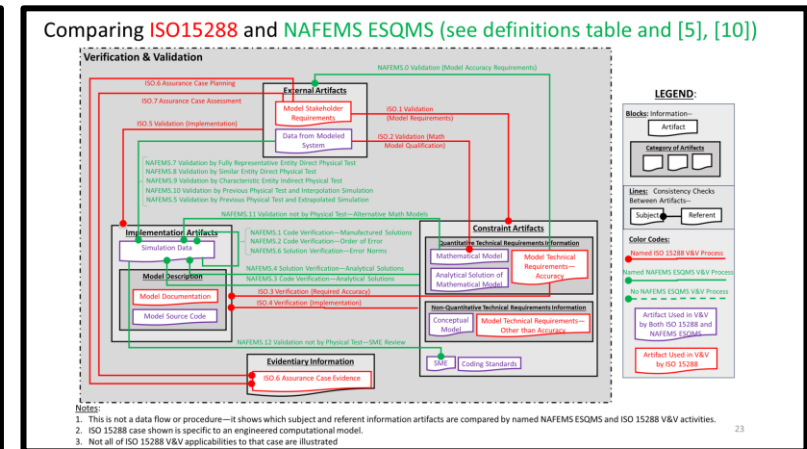
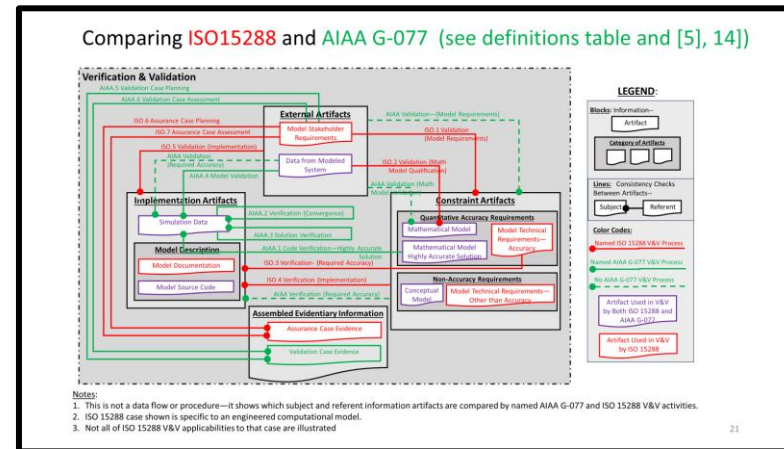
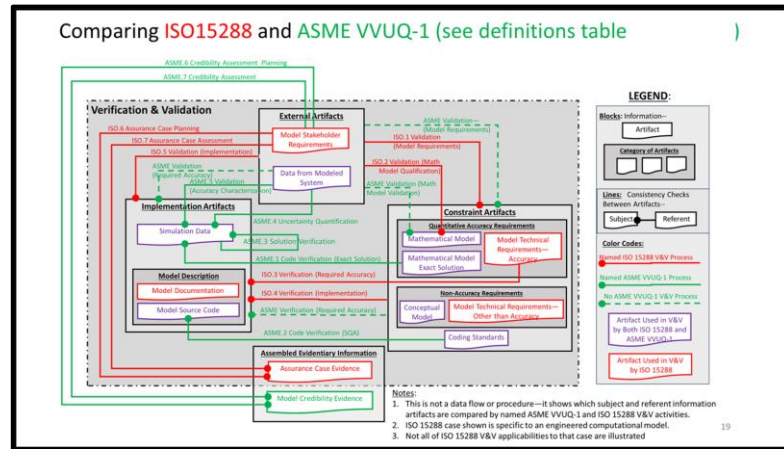


Based on a shared **Consistency Management Paradigm**

[1]

Background: Consistency Management Paradigm

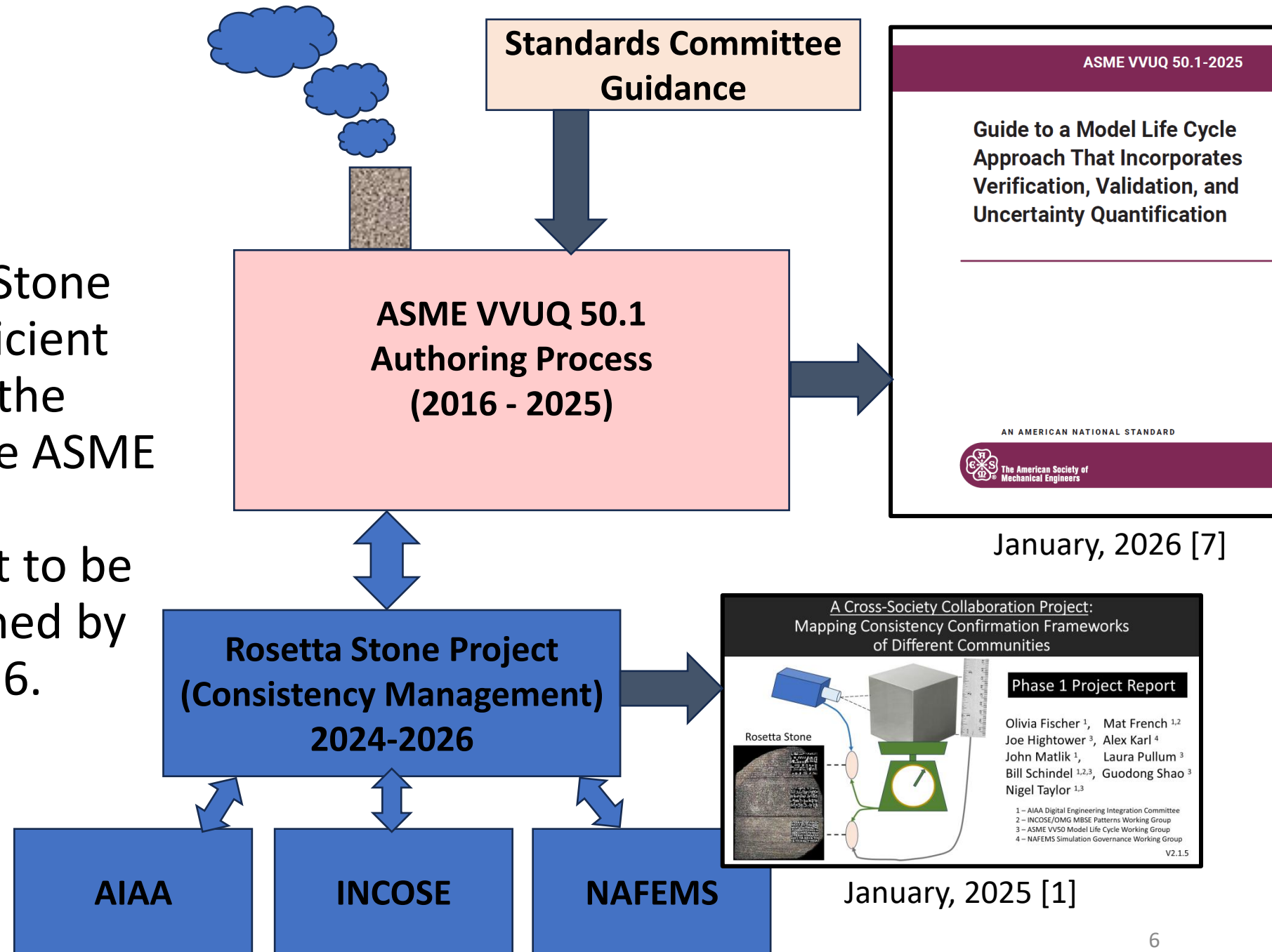
- Phase 1 showed the VVUQ standards share analyzing consistency of relatively common information artifacts—even if differently named:



- This project also illustrated that our communities can respectfully collaborate on this subject matter, building bridges between disciplines.

Background: ASME VVUQ 50.1

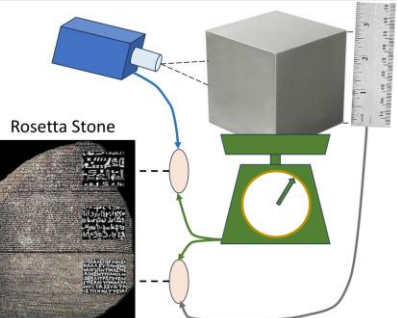
- The Phase 1 Rosetta Stone Project provided sufficient context to include in the submitted draft of the ASME VVUQ 50.1 guideline publication to allow it to be approved and published by ASME in January, 2026.



Background: Mappings relate standards without changing them

Rosetta Stone Phase I Report [1]

A Cross-Society Collaboration Project:
Mapping Consistency Confirmation Frameworks
of Different Communities

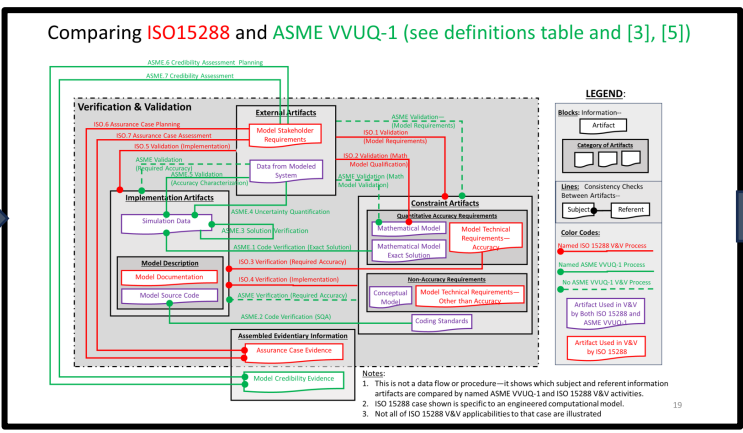


Phase 1 Project Report

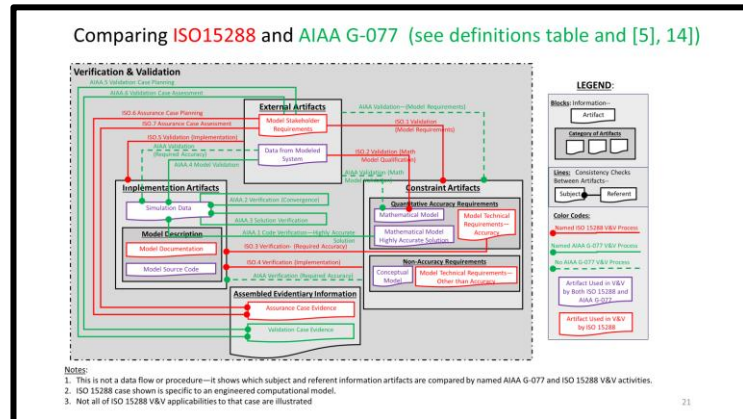
Olivia Fischer¹, Mat French^{1,2}
Joe Hightower³, Alex Karl⁴
John Matlik¹, Laura Pullum³
Bill Schindel^{1,2,3}, Guodong Shao³
Nigel Taylor^{1,3}

1 – AIAA Digital Engineering Integration Committee
2 – INCOSE/OMG MBSE Patterns Working Group
3 – ASME VV50 Model Life Cycle Working Group
4 – NAFEMS Simulation Governance Working Group

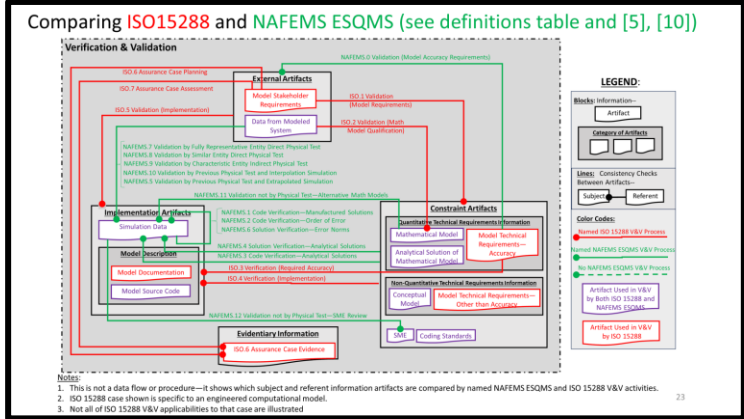
V2.1.5



✓ ASME VVUQ 1 – ISO 15288 Mapping



✓ NAFEMS ESQMS – ISO 15288 Mapping



✓ AIAA G078 CFD – ISO 15288 Mapping

ASME VVUQ 50.1-2025

**Guide to a Model Life Cycle
Approach That Incorporates
Verification, Validation, and
Uncertainty Quantification**

AN AMERICAN NATIONAL STANDARD

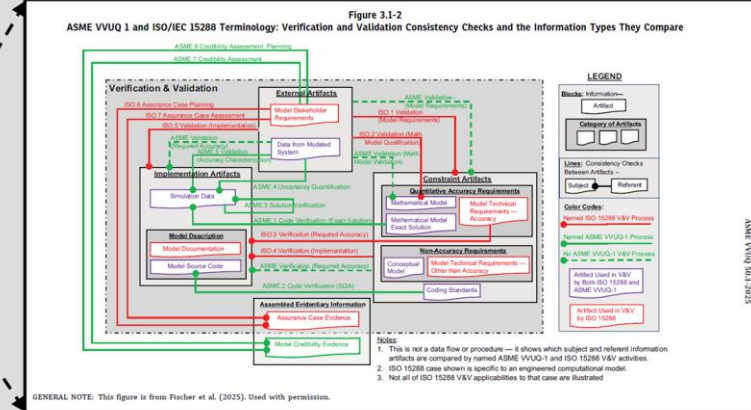
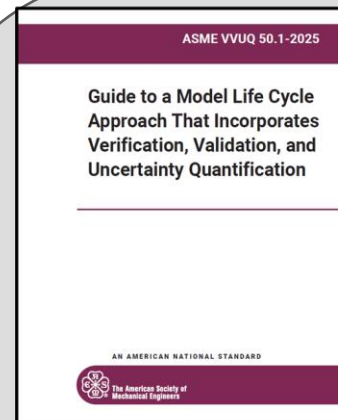


The American Society of
Mechanical Engineers

[7]

Rosetta Stone enables collaboration across discipline communities

- ASME VV50.1 shows that it is not necessary to change terminologies in order to understand and integrate practice of the whole set of discipline-specific VVUQ methods in a single project:
 - Understanding of different concepts as well as terminologies is both feasible and constructive.
- Collaboration (vs denigration) of communities and their practices contributes to better outcomes:
 - The ASME VVUQ Standards Committee has taken a leadership role in publishing VVUQ50.1 as a first step in the related cross-community collaborations to follow.



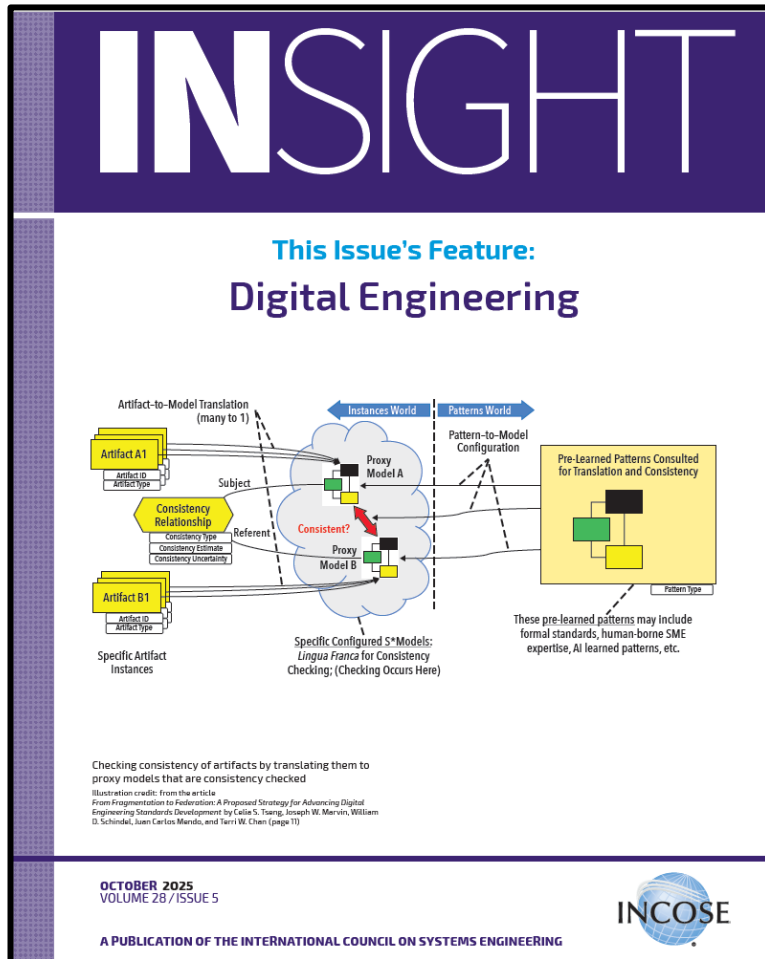
Background: ASME VVUQ Standards Committee

- At the May 19, 2026, meeting of the ASME VVUQ Standards Committee, we presented a general intention for a Rosetta Stone Phase 2 Project, to increase awareness (across the collaborating communities) of the related Consistency Management Paradigm and mapping.
- That committee encouraged such a project phase, including constructing an example.



[10]

Background: Consistency management includes extended cross-communities significance



INCOSE INSIGHT Digital Engineering cover story: [9]

- Digital Engineering – MBSE Integration Forum: A collaboration across multiple societies, SDOs.
- Extending MBSE models in a vector metric space [8].
- Creates distance metrics for previously non-quantitative MBSE model elements.
- Extends the power of ASME computational model VVUQ standards, methods to MBSE VVUQ.
- Enables machine learning & inference with MBSE models.

Potential goals for Phase 2—for discussion

1. Build awareness, across the different societies/discipline communities, of how the VVUQ standards are related, although different, using the Consistency Management Paradigm.
2. Generate an illustrative example, as a collaboration across the communities.
3. Increase awareness of the larger (beyond VVUQ) implications of the Consistency Management Paradigm for advancing innovation ecosystems.
4. Expand on the Phase 1 team and encourage further inter-societies collaboration.
5. Encourage consideration of where harmonizations across standards might be warranted.

Preliminary issues for discussion

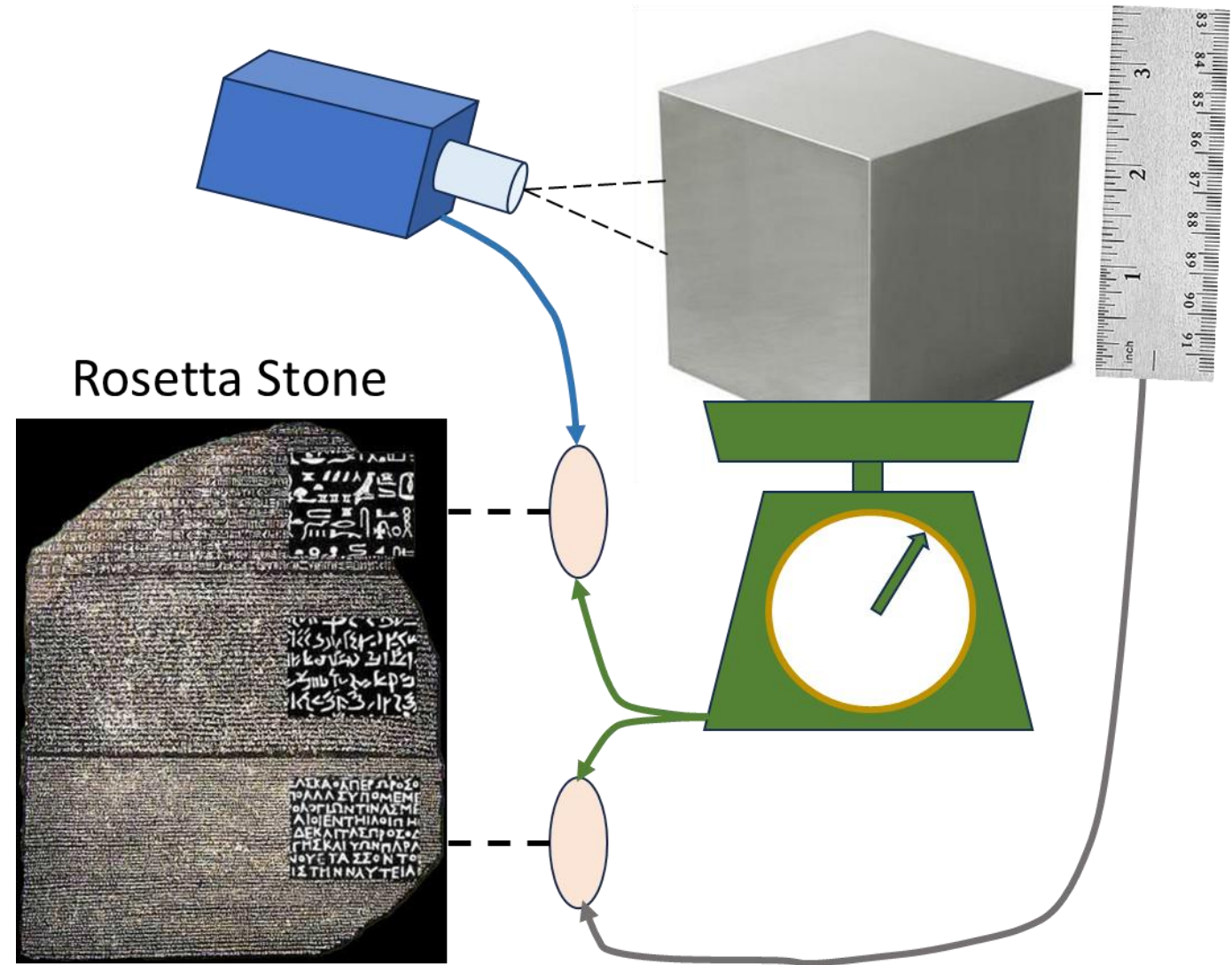
- A concrete example that includes manufacturing (but perhaps other life cycle phases in addition)—what system, materials, and unit operation types?
- What types and sources of data? Can we build on existing published examples in the literature?
- How shall we reach out to others (across at least the Phase 1 societies—AIAA, ASME, INCOSE, NAFEMS) to encourage participation?
- What are other good steps to “build awareness”?
- Following Phase 1 practice, can we limit Phase 2 to one year (12 mos.)?

Planning next steps

- Nailing down the Phase 2 goals.
- Planning outreach to invite participation.
- Identifying details of the example, and data sources.
- Determining project schedule and cadence.

Discussion

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References

1. Fischer, O., French, M., Hightower, J., Karl, A., Matlik, J., Pullum, L., Schindel, W., Shao, G., and Taylor, N. “A Cross-Society Collaboration Project: Mapping Consistency Confirmation Frameworks of Different Communities—Phase I Project Report”, presented at AIAA SciTech 2025, January, 2025. Download from -- https://www.omgwiki.org/MBSE/lib/exe/fetch.php?media=mbse:patterns:rosetta_stone_project_report_01.08.2025_v2.1.5.pdf
2. Fischer, O., French, M., Hightower, J., Karl, A., Matlik, J., Pullum, L., Schindel, W., Shao, G., and Taylor, N., “Results of the 2024 Rosetta Stone Project— A Cross-Societies Collaboration”, in *Proc. of ASME VV2025 Symposium*, 2025. Download from -- https://www.omgwiki.org/MBSE/lib/exe/fetch.php?media=mbse:patterns:rosetta_stone_project_historical_context_discussion_for_asme_vvuq2025_v1.8.5.pdf
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Comparing ISO15288 and ASME VVUQ-1

From [1], [7]

