Exploratory Charter:
Virtual Models Community Network (VMCN)

1 Purpose and Scope

This document summarizes initial and further planned exploration of shared interests in forming a Virtual Models Community Network. The purpose of this document is to record initial shared ideas from an early discussion meeting, and to provide a record of initially identified ideas from that group, for additional exploration with a larger representation. This document is not a commitment or plan for an organization, which would be provided by a future writing if found to be appropriate.

2 Summary of Problem and Opportunity

Stimulated by growing use of virtual models during innovation and subsequent life cycles, numerous technical societies, trade groups, enterprises, research institutions, government entities, and other organizations continue to form special interest groups, working groups, communities of practice, standards committees, or groups concerned with use of virtual models of diverse types.

The issues and subject matter concerned with such models is expanding and changing at accelerating rates, and related interests and organizations are continuing to spring up and grow, but the relative connectivity and awareness of each other across these entities is more limited. As a result, there appears to be a degree of duplication of effort to support this progress, even as resources are limited. Examples include educational efforts, development of information assets, support for tooling, guidelines and standards, and improved access to and use of any of those resources. Even so, reports are heard of shortages of skilled labor or technical assets that would allow more rapid growth in the use and benefits enjoyed through the successful application of virtual models.
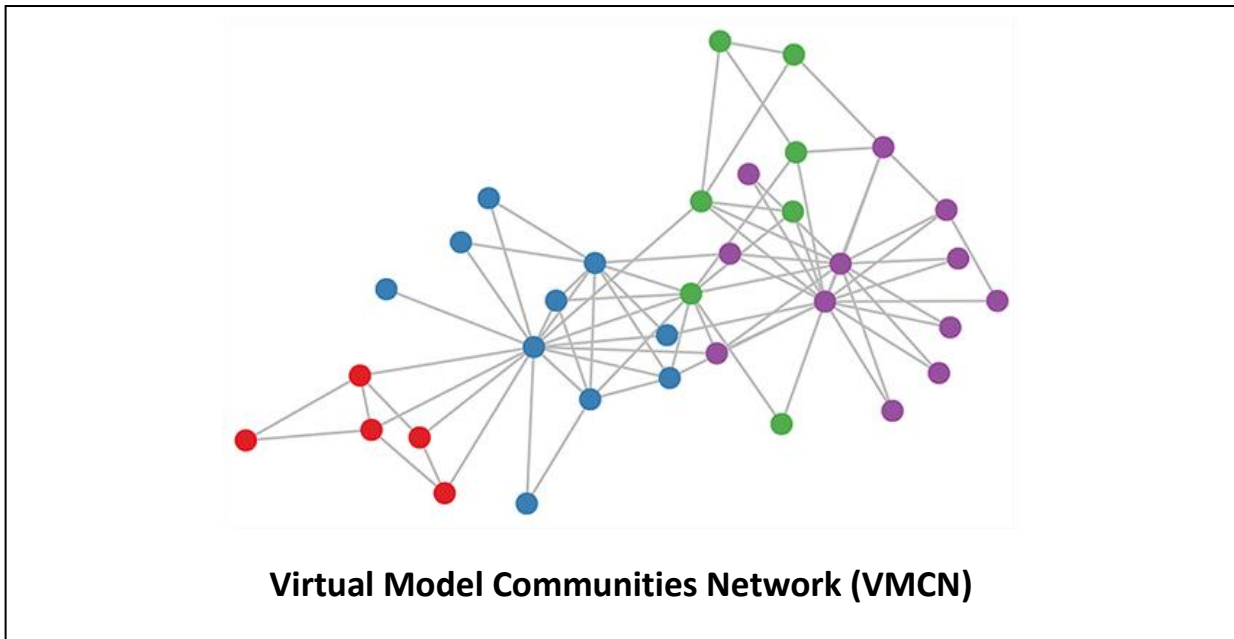
The problem and opportunity of interest here is whether some increase in the relative coupling of the related communities—even if limited to only greater awareness of each other—may help "lift all boats" by increasing the rate of this success.

3 Initial Exploratory Meeting

An exploratory meeting on this subject was held on January 29, 2019, as part of the INCOSE International Workshop in Torrance, CA. A summary of the purposes of this meeting, including a background perspective from the point of view of INCOSE and some of its historical model partners, is provided by the meeting materials of Attachment 1. The meeting consisted mostly of gathering ideas, opinions, and recommendations from the attendees. Minutes of this meeting, including identification of the attendees and their discussion, is provided in Attachment 2.

4 Conceptual Network: Simple Connections with Options

While we are interested in expanding the <u>number of connected communities</u>, keeping the <u>nature of connection very simple</u> is likewise of interest, until and unless there is evidence and appetite for more substantial or complex connections. A network of simple connections with exploratory options is visualized:

Virtual Model Communities Network (VMCN)

This approach leaves open options to explore different opportunities and needs without making greater commitments until unless warranted. Attachment 1 illustrates examples of the significant diversity of historical INCOSE relationships with different model community partners, and greater diversity is projected.

The simplest relationship / connection contemplated is Basic Awareness. Such a relationship would amount to simply registering the identity and nature of a Network Affiliate, making that information available to the rest of the Network Affiliates, with their similar identities and natures likewise visible to the joining Affiliate. In this approach, the already existing public reference information on each Network Affiliate (e.g., web site information), including a network contact, would be made available across the network on an integrated basis.

Beyond this minimalist Basic Awareness connection, options for more substantial relationships were discussed by the 01/29/2019 Torrance meeting. These are briefly described in the next section.

5 Beyond Basic Awareness: Further Potential Relationships and Activities

Participants in the 01.29.2019 Torrance meeting worked on an initial list of potential problems and opportunities that might be addressed by a Virtual Models Community Network, and some of the implied activities that might be associated with them, beyond a Basic Awareness connection:

	Problem or Opportunity	Network Activity or Relationship
1.	Limited financial and human resources and channels for promotion of events and activities	Cross-promotion and co-promotion of activities of individual Affiliates
2.		Sharing of mail lists (where appropriate to policies and regulations)
3.	Limited financial and human resources for production of events and products	Joint production of events and products
4.	Cost of attendance or participation in industry events.	Reciprocity agreements and privileges offering discounts or concessions for event registration at other Affiliates' events
5.	Proliferation of seemingly overlapping content in industry events or publications, appearing to spend scare entity resources to produce events and publications of the same issues. Also includes budgets for luminary speakers and other costs.	Collaboration in selection of general subject focus for each other's separately executed events, making them more complementary.
6.		Collaboration in production of jointly executed events, event tracks, etc.
7.		Concurrent, sequential, co-located meetings and events
8.	Innovation or evolutionary paths, guidelines, definitions, or standards in seemingly related territories are needed and sometimes developed with limited or no collaboration.	Joint planning, development, and distribution of industry roadmaps, guidelines, definitions, or standards.
9.		Joint planning of complementary coverage for roadmaps, guidelines, definitions, or standards, but still separately developed by individual Affiliates.
10.	Need more frequent, accessible, affordable education for individual members of Affiliates; related need for more skilled people	Joint planning, promotion, development or purchase, production, distribution of educational and practice content
11.	Need by both employers and practitioners for commonly understood certifications, badging, or other forms of indication of knowledge, experience, or skills	Joint planning, design, production, or access to programs of certification, badging, etc.
12.	Local or global shortages of employment opportunities for skilled people.	Joint promotion of local or global employment opportunities for skilled people
13.	Interest by regulatory agencies in neutral points of technical industry access for generation of standards or frameworks that facilitate regulatory efficiency and effectiveness	Joint activities by technical societies and regulators in planning and generating related standards, guidelines, or examples.
14.	Desire for improved awareness of industry needs for research into specific areas.	Research networks of research community and industry community members
15.	Desire for improved industry awareness of existing research results or interests by research community.	
16.	Additional problems or opportunities—to be discovered	Additional network activities or relationships

6   Identifying Potential Network Affiliates and Their Interests

Based on suggestions from the 01.19.2019 Torrance meeting, the following categories of potential Network Affiliates have been identified, as targets for future outreach concerning identification of related interests:

1. Professional Technical Societies (e.g., INCOSE, ASME, SAE, IEEE, ASCE, AIChE, others; including working groups, sub-societies, or SIGS in both INCOSE and other societies)
2. Trade Groups and Industry Institutes (e.g., AIAA, NDIA, V4I, others)
3. Standards-Making Groups (e.g., ISO, ANSI, OMG, ASME, SAE, others)
4. Government Entities (e.g., DoD, NASA, DOC, State Governments, others)
5. Educational and Research Institutions (ASEE, CSER, individual universities, others)
6. Management oriented professional societies (e.g., ASEM, AMA, PMI, etc.)
7. Individual enterprises
8. Other categories to be identified.

7   Existing Experience; Recognition of Challenges, Obstacles, Risks

It should be recognized that this is not an entirely new subject for pursuit, in several respects:

1. The 01.29.2019 Torrance meeting included representatives of several related networking organizations with interests in at least some aspects of virtual model use; refer to Att. 2.
2. INCOSE itself has had significant experience in partnerships with model-related organizations; refer to Att. 1.

Based on these and experiences, the following challenges, obstacles, and risks to success of this interest have been noted historically:

- A common reaction to these concepts can be predicted to be "our plate is already full, we don't have additional capacity for this"
- Another common reaction can be predicted to be "we already deal with these needs within our current activities"
- It is human nature that "do it myself/ourselves" is often more comfortable than partnering

Accordingly, pursuit of these ideas should include clear defense of how they can save resources, increase net benefits, and address unmet needs. Persistence will likewise be needed to encourage formation of new relationships.

8   Next Steps

The following next steps were agreed upon during the 01.29.2019 Torrance meeting:

1. Generate this Exploratory Charter and meeting minutes (Att. 2), for review by meeting attendees;
2. Socialize this Exploratory Charter with INCOSE leadership;
3. Identify initial target entities from the categories listed in (6) for contact, generate outreach activity plan, and execute initial outreach and feedback collection;
4. Based on feedback, generate further plans.

9 Schedule

A proposed initial schedule is to reach start of step (3) in the above Next Steps by the July occurrence of the INCOSE International Symposium, thereby creating the opportunity for some outreach activity invitations to that event for potential VMCN Affiliates.

10 References

Attachment 1: Jan 29, 2019, INCOSE IW2019 meeting slides: "Model Communities Outreach", V1.2.1A.

Attachment 2: Minutes of meeting of Jan 29, 2019.