



Announcing the 10th Annual Cohort of the INCOSE Technical Leadership Institute

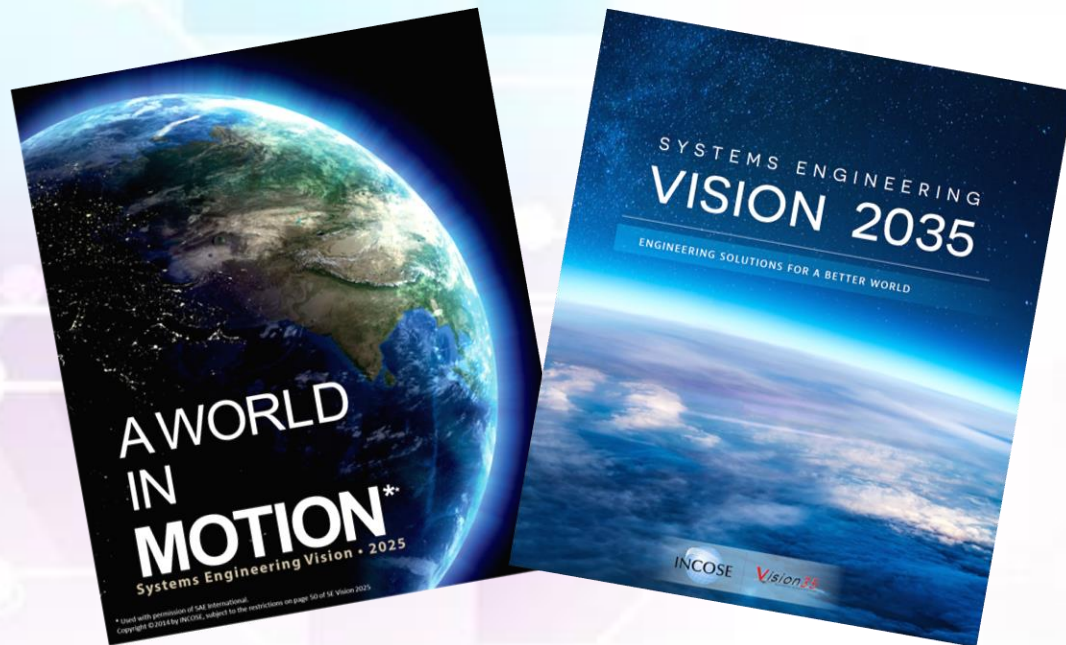
*A global learning network of active INCOSE members
seeking to improve their leadership skills
in an open, collaborative environment*

January 2024

Coaches Patrick Godfrey, Suja Joseph-Malherbe, and David Long

The Foundations of the INCOSE Technical Leadership Institute (TLI)

Developing systems leaders equipped to address today's product, enterprise, and societal complexity



TLI Vision

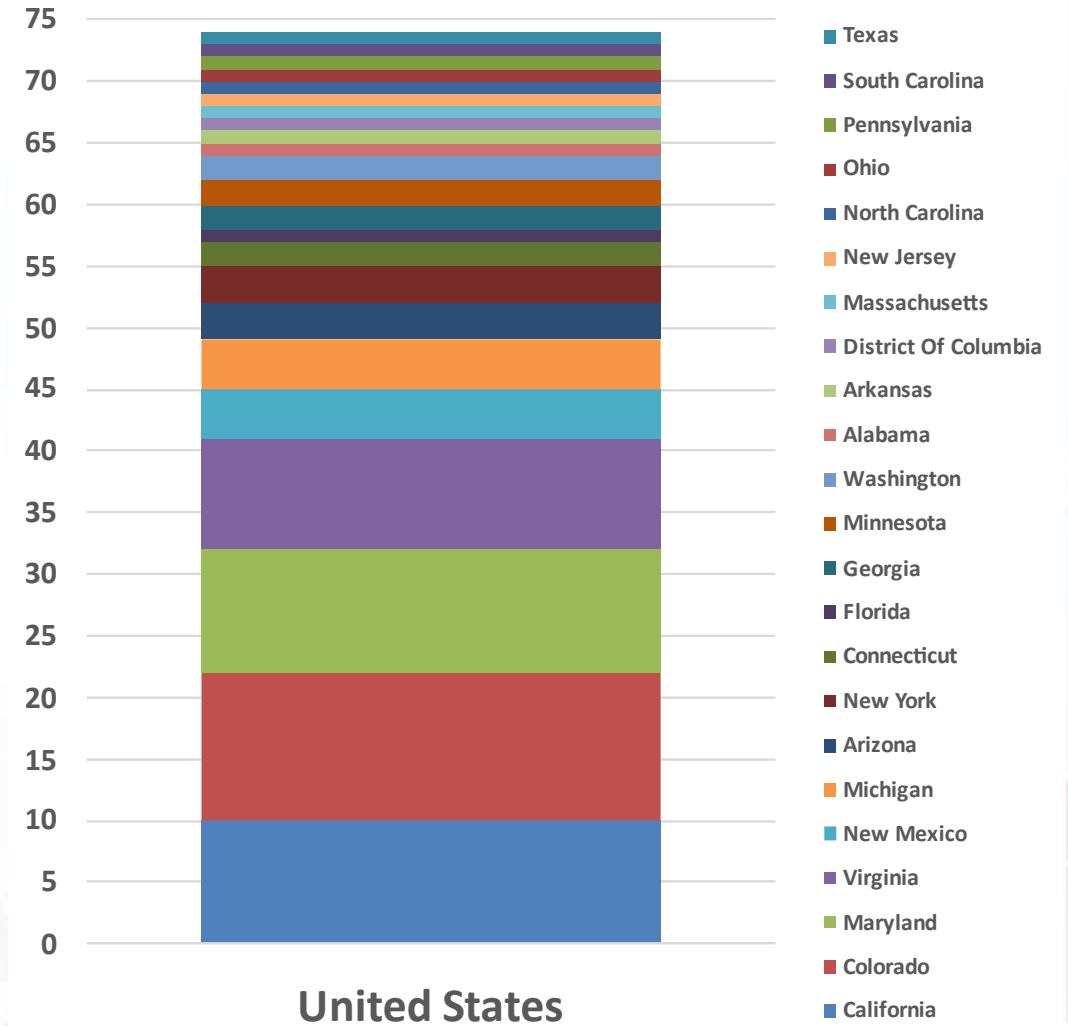
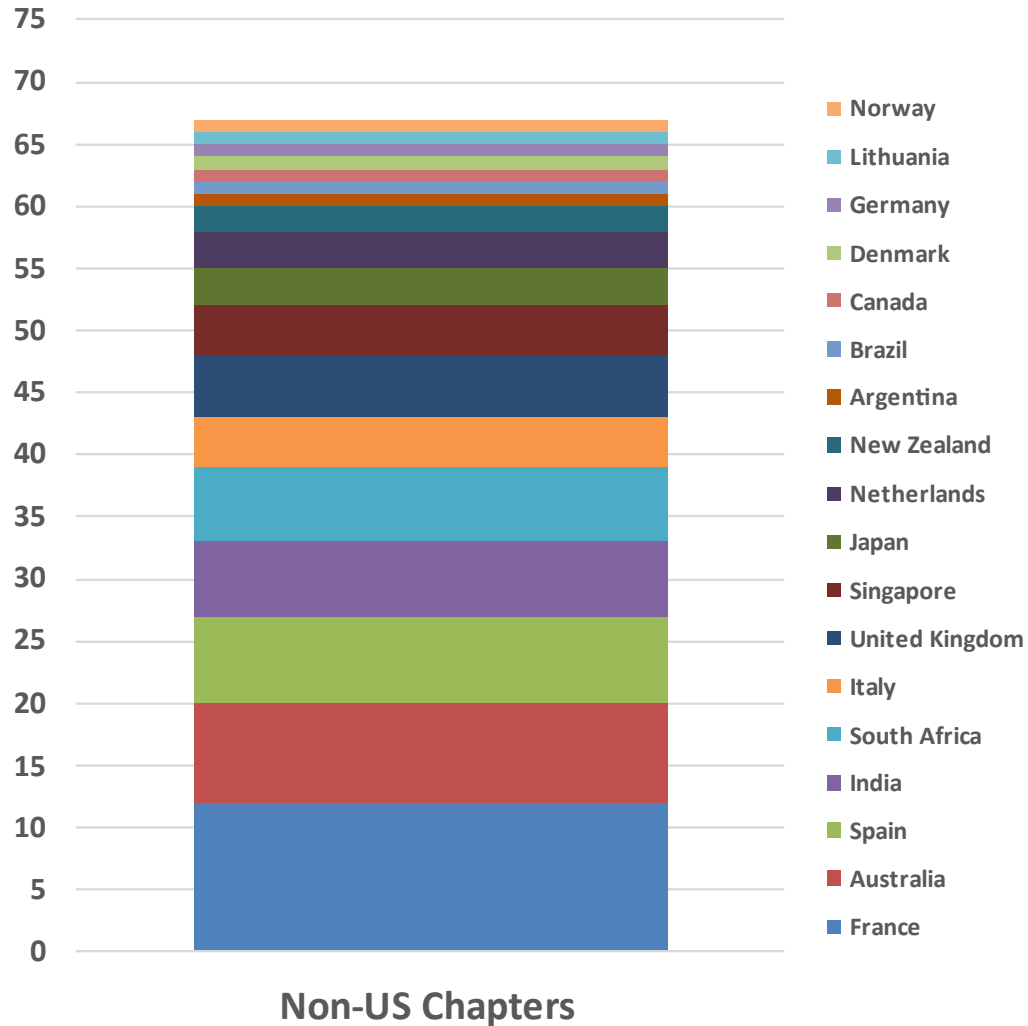
- **Individual members** become more capable leaders and join an international network of systems engineering leaders
- **Sponsoring organizations** obtain non-proprietary, tuition-free technical leadership training for future SE leaders
- **INCOSE** has a growing pool of leaders to draw on and an enhanced international reputation for SE leadership

A Story of Continued Growth and Advancement

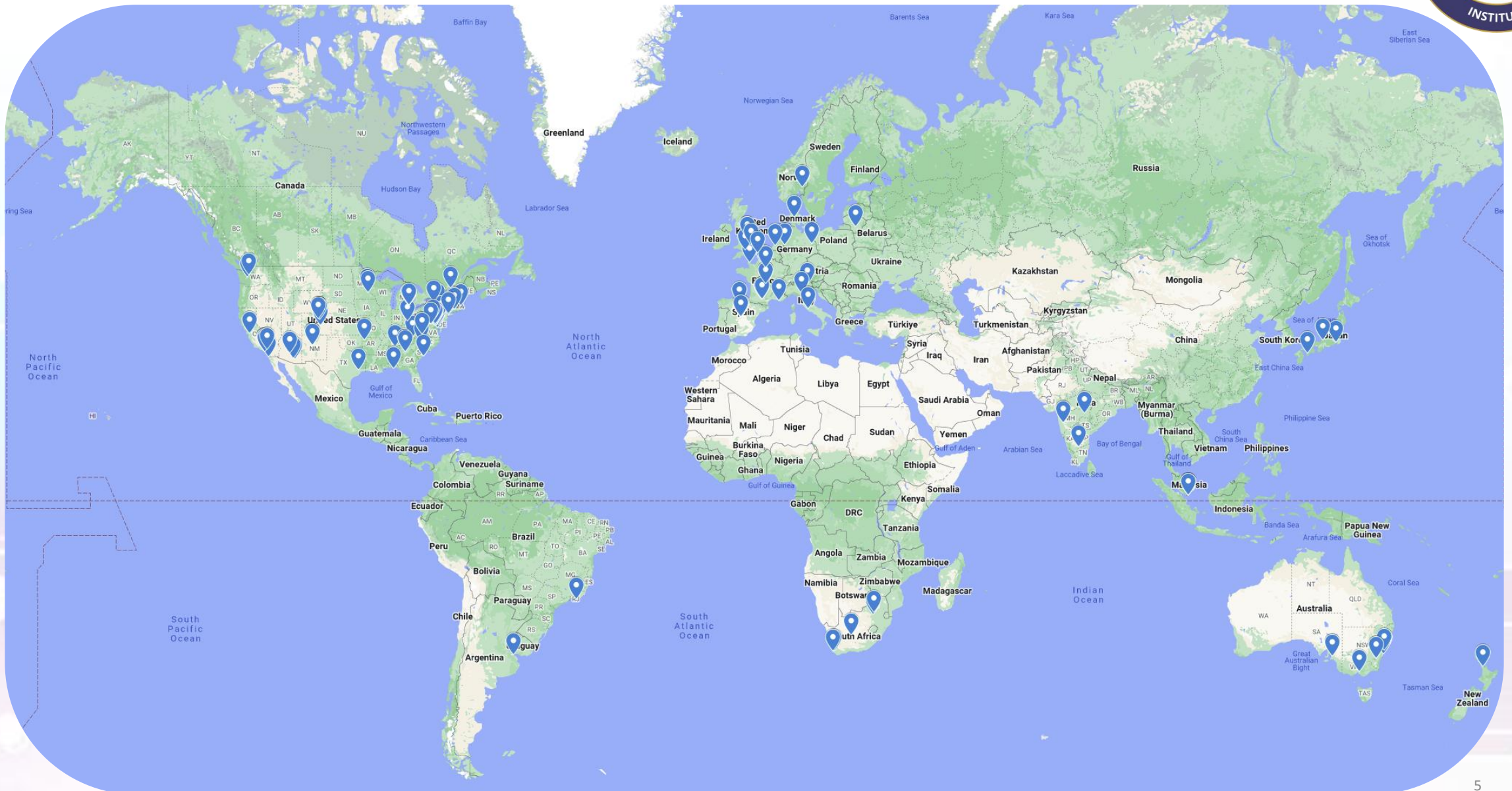


- Established as an initiative of the President and Board of Directors in 2014
- Launched program and first cohort at IS 2015 with additional cohorts launched annually each June/July
- Founded upon an initial two-year learning journey of engagement, exploration, and reflection
- Pivoted from in-person to virtual workshops in 2020 resulting in a more diverse and inclusive program
- Inducted 93 members of the first seven cohorts as full members with Cohort 8 (20 members) and Cohort 9 (24 members) working towards induction
- Accepting nominations for members of Cohort 10, which will be conducted **virtually**, and there are **no required costs** for participation

A Vibrant Network of **141 Leaders** from 6 Continents, 19 Countries, and 23 U.S. States!



A Growing Global Footprint





Technical Leadership of Virtual and Remotely Distributed Teams

Francesco Dazzi
Cherenkov Telescope Array Observatory
@CDazzi
francesco.dazzi@cta.ch

Elena Gallego
Thales Group
elena.gallego@thales.com

W. Patrick Keen
Lockheed Martin Space
keewpatrick@gmail.com

Mark McKelvin
The Aerospace Corporation
mckelvin@usc.edu

Sean McCoy
Trane Technologies, Inc.
smccoy@trane.com

Allison Weigel
Toray Composite Materials America, Inc.
allison.weigel@torayusa.com

Lisa Ziliox
BAE Systems Inc
lisa.ziliox@baesystems.com

Copyright © 2021 by Francesco Dazzi, Elena Gallego, Mark McKelvin, W. Patrick Keen, Sean McCoy, Allison Weigel, and Lisa Ziliox. Permission granted to reproduce and distribute this paper for non-commercial purposes.

Abstract. The world is increasingly virtual and complex, with many relationships and teams at a global scale. The situation will not be changing any time soon. Sometimes, it is only possible to interact at a distance, of not only time zones and space, but also sometimes interpersonal distance, where names and voices make up another person. Regardless, technical teams will need good leadership to address complex situations in these virtual and remotely distributed (VaRD) environments. So, in a VaRD environment, do leadership practices and skills have to change? Do the tools, techniques, and technology make current practices for leadership in general, and the application of those practices obsolete? Maybe not.

This paper seeks to examine the nature of what is really changing when leading in a VaRD environment through the lens of engineers leading teams in global and complex technical challenges. Those perspectives are analyzed to determine the factors that go into a VaRD environment. In addition, this paper analyzes how interactions between teams compare to an in-person environment, how leadership practices are applied in this environment, and how technical leadership is tailored for these new environments.

NOMINATION PACKAGE

REPRESENTATIVE KICKOFF WORKSHOP 17-21 JUNE 2024 (15 HOURS)			
MONDAY TLI Introduction and Workshop Kickoff Self-Aware Leader Leading through Influence Breakout Team Instructions	TUESDAY Breakout Teams	WEDNESDAY Breakout Team Reflection Complexity and Uncertainty Storytelling and Active Listening Breakout Team Instructions	THURSDAY Breakout Teams
FRIDAY Breakout Team Reflection Shared Model Building Introduction to Mentoring Embarking on a Learning Journey			

REPRESENTATIVE Q3 WORKSHOP 13-17 JANUARY 2025 (15 HOURS)			
MONDAY Interpreting Your 360-Degree Feedback Your Learning Journey – Chapter 2 Understanding Cognitive Biases Breakout Team Instructions	TUESDAY Breakout Teams	WEDNESDAY Breakout Team Reflection Diversity, Equity, and Inclusion Shared Model Building as Sense-Making Breakout Team Instructions	THURSDAY Breakout Teams
FRIDAY Breakout Team Reflection Collaboration and Shared Exploration Your Learning Journey Continued			

Personal Journeys

My learning journey

Shared Leadership Development Model

Shared Model: Technical & Professional Experience | Greater Leadership Life Experience

Team Member Name

Why did you choose this experiment?	What was the experiment trying to achieve?	What were some of the experiment details?	What were the Results?	Did it still feel safe after the experiment (Yes/No/Other - Details)?	What will you do following this? (Continue, Stop, Other?)
Andrew Murrell	How assignment as leader of a larger team raised concerns on limitations of personal experience	Improve team engagement to achieve more ideal solutions	Half suggesting, my own solutions at the start of a problem and other team feedback before presenting ideas	I felt I had less control, however the team was more empowered on ownership. Tasks did begin to slip	Other, did not receive a holistic solution, conclusion ongoing
Alexander Chang	Managing schedule in dual and PPP was going to be a challenge and a learning experience	Improve team engagement to achieve more ideal solutions	Team members were engaged and a schedule was set up at the start of the effort	It is slow. Not everyone is familiar with the tool but team and I will have more time to use the tool and make it more effective for teaming. Some have completely changed the way of managing the schedule and others are still in the process. Team did an excellent job and personally provided short walkthroughs with some of the priority tasks.	Continue. The schedule is coming together and it is making it easier to synchronize between teams and understand from each team tasks to another.
Pj Parrajohn	The experiment was a safe way for me to practice my leadership and group problem-solving skills in a safe environment and well understood format.	Improve team engagement to achieve more ideal solutions	Team members were engaged and a schedule was set up at the start of the effort	On time with acceptable quality submission and clear improvement in displayed confidence throughout the process	Continue. Find other opportunities for her lead and other projects in settings with teaming groups and practice, all the elements.

QUARTERLY PROJECTS (INDIVIDUAL AND COLLABORATIVE)

INDUCTION AS A FULL MEMBER OF THE INSTITUTE

MAJOR PROJECTS (Q4-Q6)

A CONTINUING THROUGH-LIFE LEARNING JOURNEY

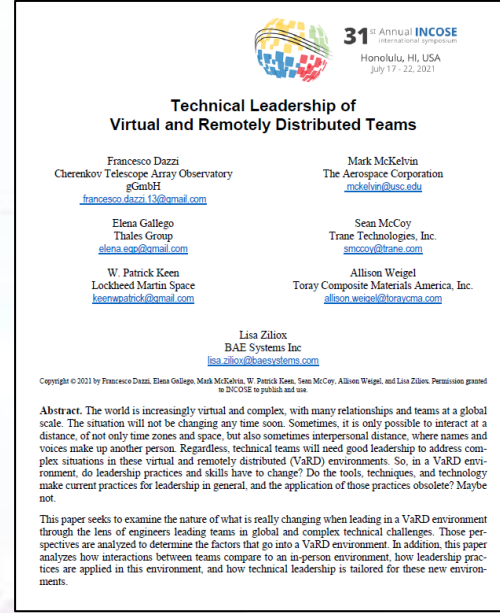
6



NOMINATION PACKAGE

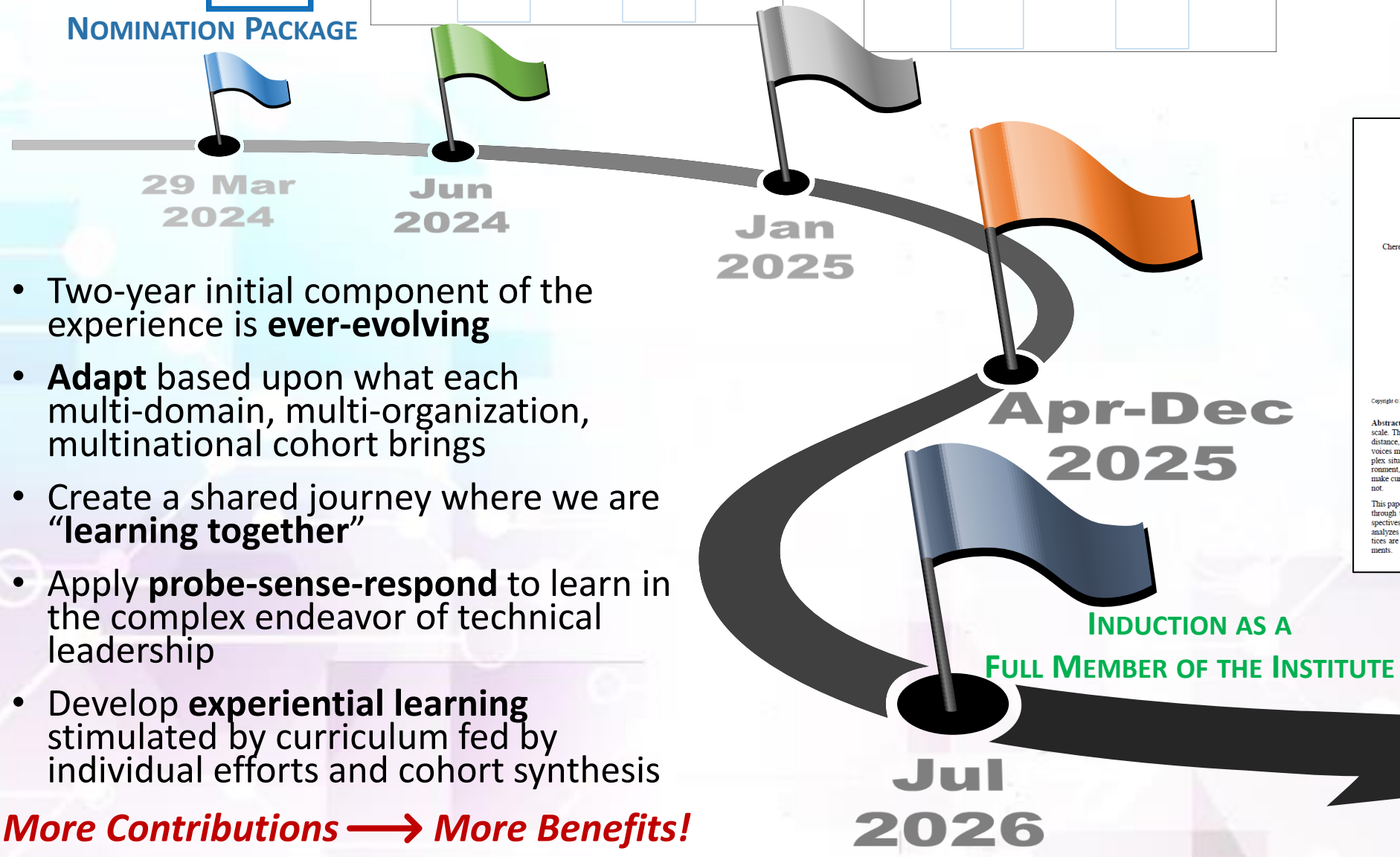
REPRESENTATIVE KICKOFF WORKSHOP 17-21 JUNE 2024 (15 HOURS)				
Monday	Tuesday	Wednesday	Thursday	Friday
TLI Introduction and Workshop Kickoff Self-Aware Leader Leading through Influence Breakout Team Instructions	Breakout Teams	Breakout Team Reflection Complexity and Uncertainty Storytelling and Active Listening Breakout Team Instructions	Breakout Teams	Breakout Team Reflection Shared Model Building Introduction to Mentoring Embarking on a Learning Journey

REPRESENTATIVE Q3 WORKSHOP 13-17 JANUARY 2025 (15 HOURS)				
Monday	Tuesday	Wednesday	Thursday	Friday
Interpreting Your 360-Degree Feedback Your Learning Journey – Chapter 2 Understanding Cognitive Biases Breakout Team Instructions	Breakout Teams	Breakout Team Reflection Diversity, Equity, and Inclusion Shared Model Building as Sense-Making Breakout Team Instructions	Breakout Teams	Breakout Team Reflection Collaboration and Shared Exploration Your Learning Journey Continued



- Two-year initial component of the experience is **ever-evolving**
- **Adapt** based upon what each multi-domain, multi-organization, multinational cohort brings
- Create a shared journey where we are **“learning together”**
- Apply **probe-sense-respond** to learn in the complex endeavor of technical leadership
- Develop **experiential learning** stimulated by curriculum fed by individual efforts and cohort synthesis

More Contributions —→ More Benefits!



MAJOR PROJECTS (Q4-Q6)

A CONTINUING THROUGH-LIFE LEARNING JOURNEY

What Constitutes “Success”?

- Technical leadership development is a complex endeavor
 - Every individual’s journey is different
STARTING POINT • NEEDS • DESIRES • PERSONAL CONTEXT • ENVIRONMENT
- Coaches assess where each participant begins, guide them in clarifying their desired journey, and help them progress as far as they can
 - Self-awareness and growth
 - Communicating effectively
 - Fostering collaboration
 - Enabling others
 - Leading through influence
 - Operating within complexity and uncertainty
 - Leveraging diverse viewpoints and skills
 - Thinking holistically and strategically
 - Advancing leadership concepts
 - Owning their learning journey

Coaches assess and encourage engagement, contributions, and constructive approaches.

Coaches do not grade, compare, or evaluate participants.





Erik Wilkinson

Chief Systems Engineer
Ball Aerospace

Several Ball Aerospace team members have participated in the TLI cohorts. These participants have been able to take lessons learned through the TLI and quickly apply the skills into a real-world setting, which benefits our customers, leadership and fellow team members.



Erika Palmer

Director of Technical Products
and Services
INCOSE
TLI Cohort 6

It's easy to say that TLI helps with networking and reflections on your journey to help you grow as a leader. And this is all true, but TLI is more than that for me. It is a safe harbor. It is a foundation. There are not only times of doubt in a leadership journey - where you question, 'can I really do this?' - but there are also critical tipping points, conflict and all kinds of other messy things that happen along the way. TLI provides a space that supports you when things get messy.



Col (ret) Tim West

US Air Force
Research Laboratory
TLI Cohort 7

I share TLI's belief that leadership, like engineering skills, must be crafted and honed. I personally applied for TLI because I am convinced that even after a successful 30-year career in the US Air Force leading the development of the weapon systems of tomorrow, I still have much to learn about leadership – and much to share with my fellow cohort members. I have especially enjoyed the opportunity to share ideas and experiences from those in other industry sectors and other countries so that we can mutually develop more diverse, robust, and inclusive leadership skills.

Nomination Process

Applicants must be ***nominated by an INCOSE leader*** and then submit a package that includes

- **Nominating letter** from an INCOSE Board Member, Director, Associate or Assistant Director, Chapter President, or member of the Corporate Advisory Board
- **Letter of recommendation and support** from the candidate's home organization, including acknowledgement of the commitments of the initial two-year experience
- **Personal statement** describing the expected benefits to the candidate, his or her organization, and INCOSE
- **Resume** describing positions held and specific systems engineering accomplishments

Packages for Cohort 10 are due **29 March 2024**

Nomination Criteria

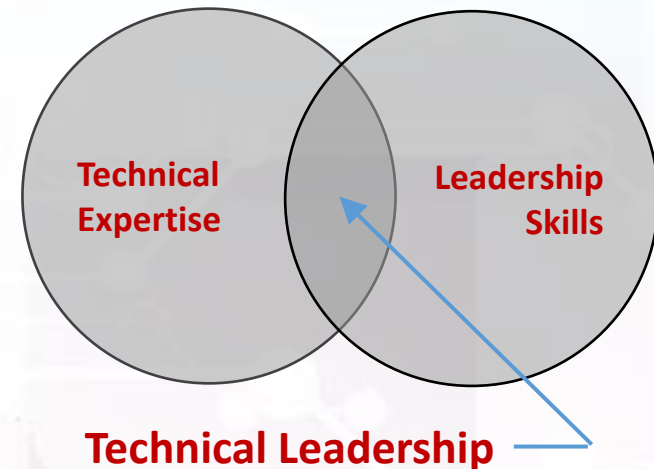
Nominees should be chosen based on

- Proven aptitude in both systems engineering and technical leadership
- Comfort working in an uncertain world and ability to tackle wicked, messy problems
- Demonstrated interest in and commitment to enhancing personal technical leadership
- Potential for assuming positions of greater leadership in the future

Nominating letters should describe a *specific instance* in which the candidate has demonstrated one or more of the following behaviors*

- Held the vision
- Thought strategically
- Fostered collaboration
- Communicated effectively
- Enabled others to be successful
- Demonstrated emotional intelligence

The clear framing of this specific instance is a key component of the package and is weighted accordingly during the evaluation process



*Behaviors are more fully described the Appendix

Nomination Process

- Nominating letters should be sent both to the nominee and to nominations@incose.net
- Once nominated, participants are required to assemble an application package that includes
 - **Nominating letter** describing a specific instance in which the candidate has demonstrated one of the six identified leadership behaviors
 - **Letter of recommendation and support** from the candidate's home organization
 - **Personal statement** describing the expected benefits to the candidate, his or her organization, and INCOSE
 - **Resume** describing positions held and specific systems engineering accomplishments
- The evaluation team considers all aspects of the nomination with particular weight given to the nominating letter and the personal statement

Completed application packages should be zipped and e-mailed to nominations@incose.net
no later than **29 March 2024**

Submitters will receive an acknowledgement of their submission within 2 business days.
If they do not, they should follow up with nominations@incose.net and
david.long@incose.net to ensure their package has been received.

The TLI Coaches would be happy to speak at an upcoming event or otherwise answer any questions you or your members might have

For more information,
visit www.incose.org/learn/tli
or contact david.long@incose.net

An information package will also be provided:

Presentation Slides

Instructions for Applicants

What Benefits Can I Expect?

Frequently Asked Questions

Appendix: Systems Engineering Technical Leadership Model

Nominating Letter Requirement

Describe a ***specific instance*** in which the nominee has demonstrated one or more of the following:

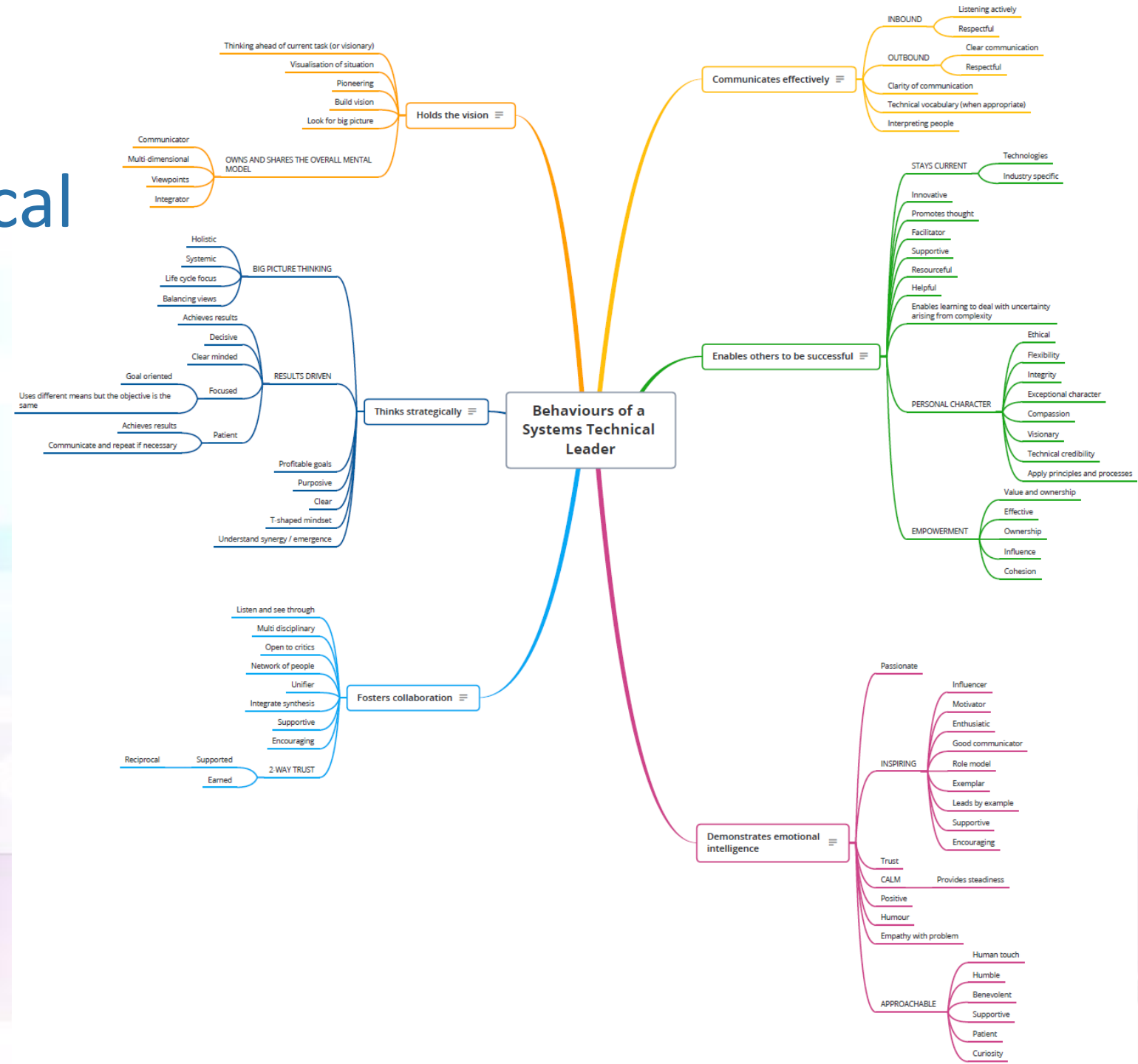
- Held the vision
- Thought strategically
- Fostered collaboration
- Communicated effectively
- Enabled others to be successful
- Demonstrated emotional intelligence

SE Technical Leadership Model

Ref: Godfrey, Building a Technical Leadership Model, Invited Paper, IS 2016

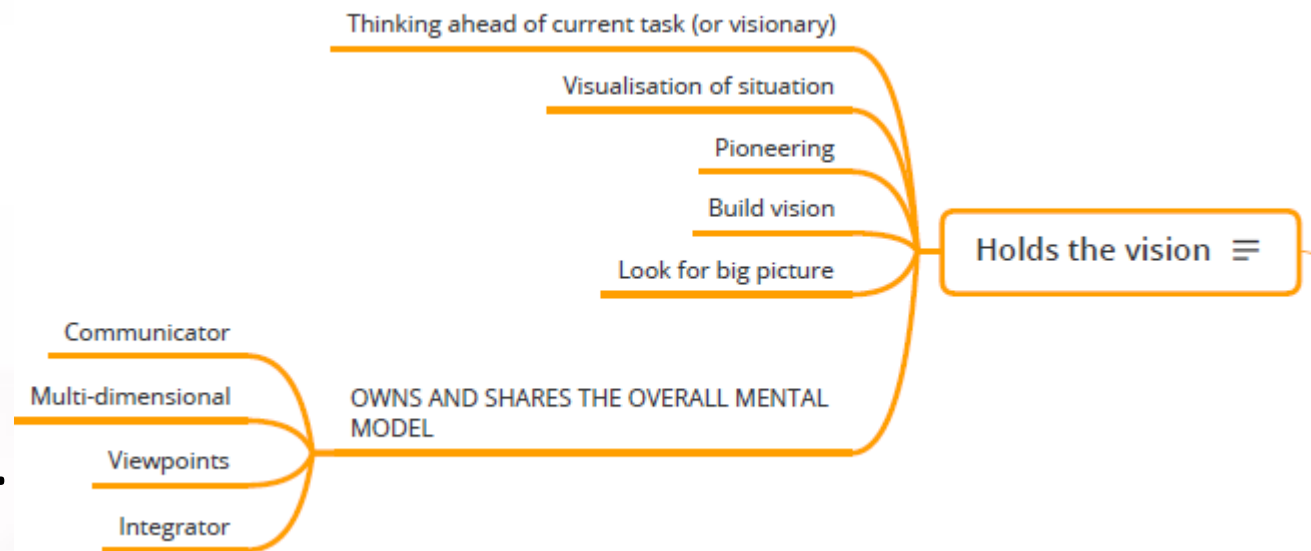
- **What:** A shared INCOSE leadership model
- **Who:** Developed as a collaborative learning initiative by the first cohort of the INCOSE Institute
- **Why:** Provides a cohort definition of systems technical leadership in their engineering environment
- **How:** “Being a systems technical leader” is defined by six interdependent branches of a mind map
 - Each branch is elaborated in the following slides

Behaviors of a Systems Technical Leader



Holding the Vision

A vision is an aspirational statement that defines who we are and where we want to go. It provides an impelling purpose that energizes people to do more than they thought they could or would. To accomplish this, however, a vision must be more than just a statement posted on the wall. It must be the start of a continual and ongoing conversation that we, as systems engineers, are well positioned to support, reinforce and encourage.



Attributes of a TLI Leader from Cohort 1 shared model

Thinking Strategically

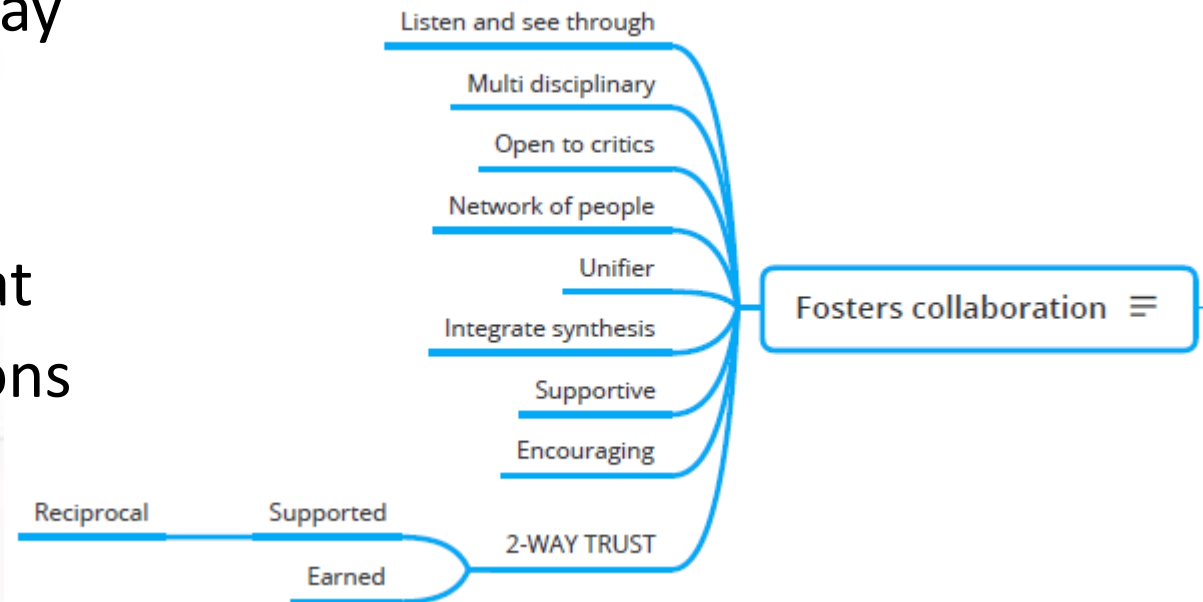
Strategic thinking is long term, rather than short-term, tactical thinking. It must be continuous and ongoing, not a one-time, up-front event. We formulate a hypothesis before taking action, treat the action as an experiment to test the hypothesis, and based on the results we observe, we continue along the path we started or formulate a new hypothesis and begin the testing anew. This is the scientific method applied to everything we do.



Attributes of a TLI Leader from Cohort 1 shared model

Fostering Collaboration

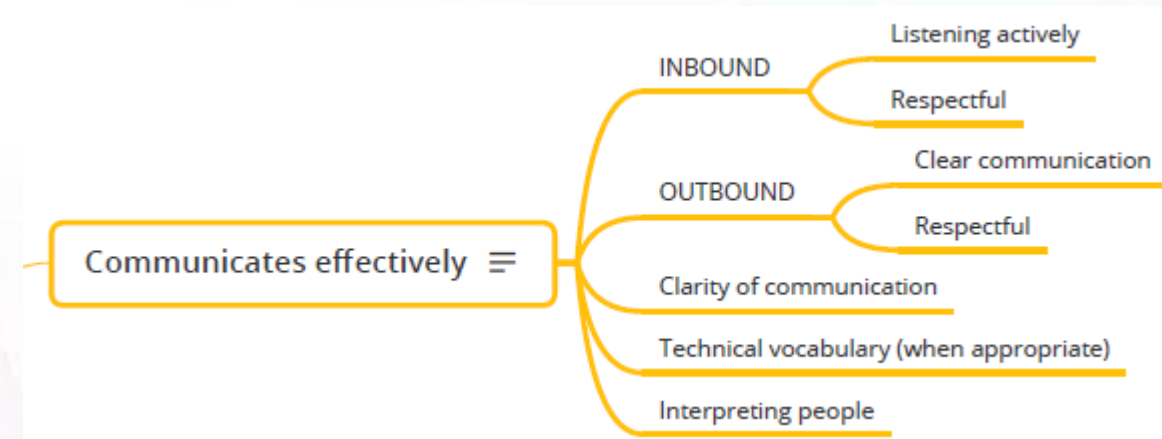
Complex problems cannot be resolved by individuals working alone; their resolution requires the efforts of many. Individual contributions must be woven together into a collective enterprise for which success means success of the whole, not of the individual parts. This enterprise represents a vast social network and systems engineers play a vital role in building, maintaining and strengthening these networks. Our goal should be to foster not just tradeoffs that compromise between competing positions but collaboration that allows new ideas to emerge through creative conflict and experimentation.



Attributes of a TLI Leader from Cohort 1 shared model

Communicating Effectively

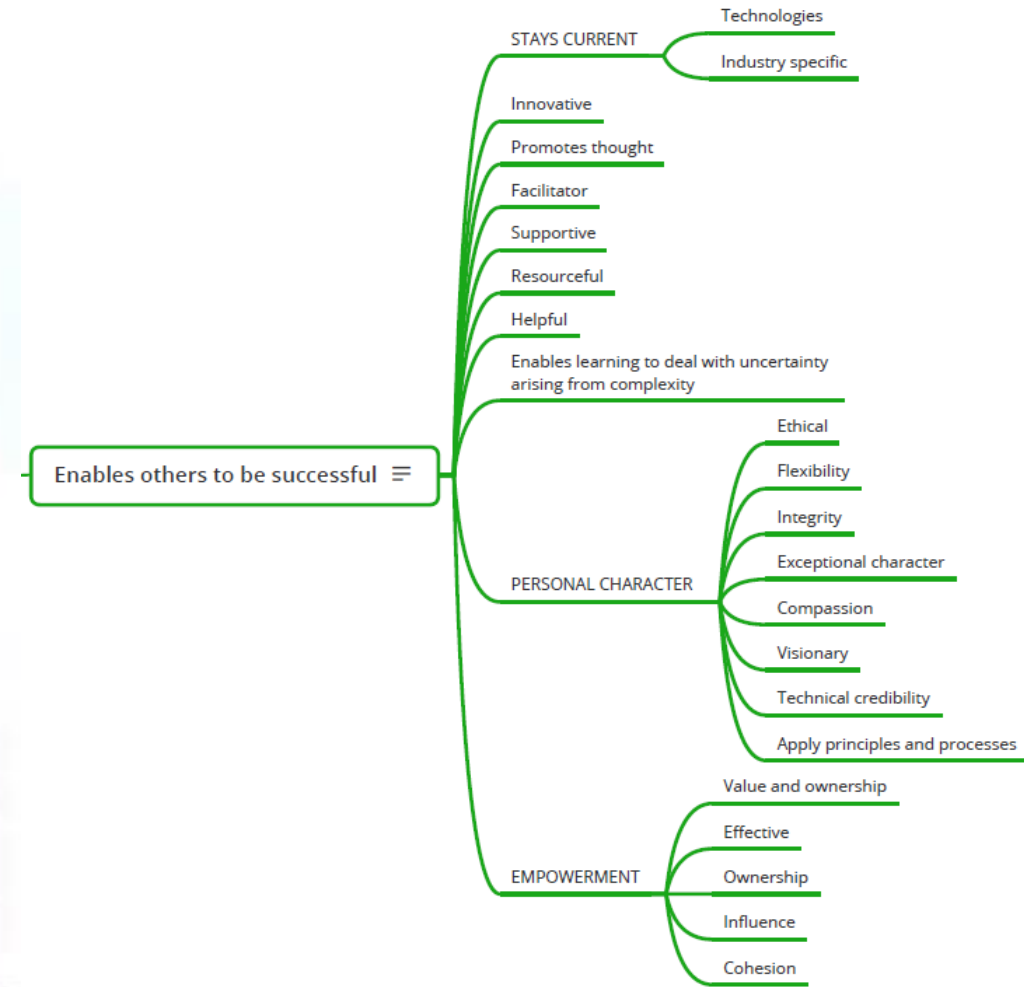
Often when people seek to improve their communication skills, they begin tweaking their “transmitters.” But effective communication is not just about speaking it is also about listening. We need to improve our “receivers.” Good listening requires attention to the content being spoken and the emotion with which it is communicated. We have to learn the language of those we seek to influence and speak to them in words they understand.



Attributes of a TLI Leader from Cohort 1 shared model

Enabling Others to Be Successful

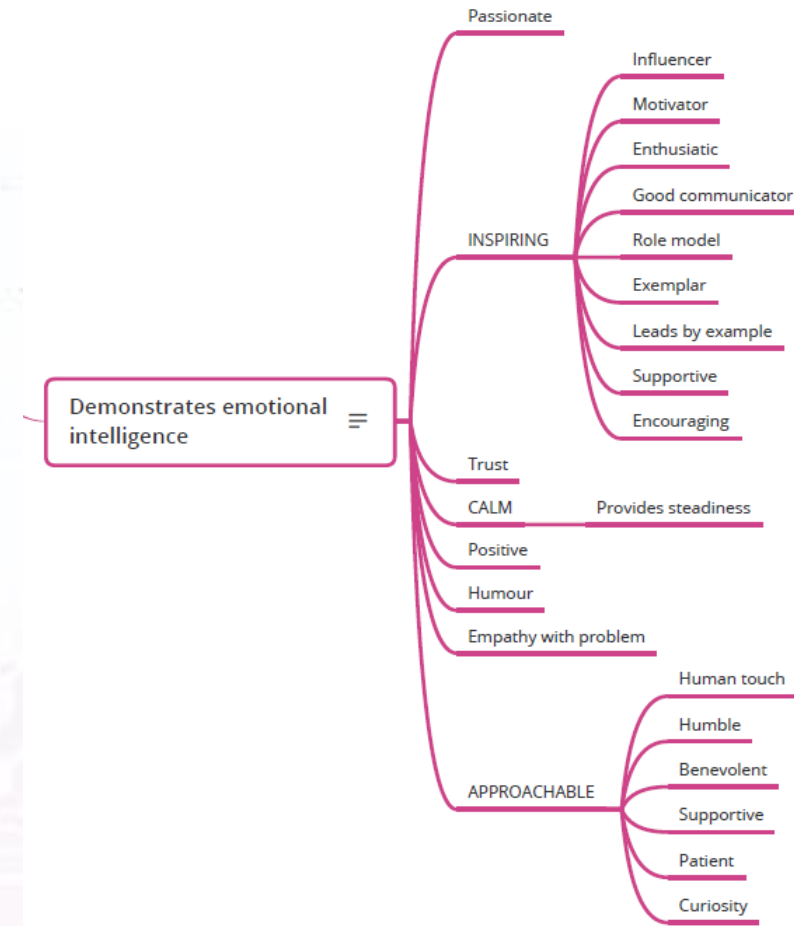
Since systems engineers must lead through influence, the results we seek to achieve will necessarily be accomplished by others. Our role is to influence, guide, encourage and support those who are in a position to produce those results. This requires a sense of humility and a deep respect those we seek to lead. We must trust in their abilities, and in their capacity to learn through discovery not lecture. Our success will derive from their success and their acknowledgement that we contributed to it.



Attributes of a TLI Leader from Cohort 1 shared model

Demonstrating Emotional Intelligence

In order to lead, we must first understand ourselves, the differences between ourselves and others. Unless we recognize and understand these differences, we risk talking past others or causing them to reject our input. We must continually seek feedback to decrease our blind spots and be willing to reveal things that help others know us better. While the former can make us uncomfortable, and the latter more vulnerable, the payoff will be more than worth the effort.



Attributes of a TLI Leader
from Cohort 1 shared model