

# SESE 2017

## The South European Systems Engineering Tour

### Introduction – Welcome

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Director of EMEA Sector of INCOSE*



Paris, 29<sup>th</sup> May



Rome, 30<sup>th</sup> May



Madrid, 31<sup>st</sup> May

***Jean-Claude Roussel***  
*Systems Engineering Senior Expert*  
*Technology Process Owner at Airbus CTO*

*Technical Director of INCOSE\* in 2011-2013*  
*Director of EMEA (Europe, Middle East, Africa) Sector of*  
*INCOSE since Jan 2014.*  
*ESEP (Expert Systems Engineering Professional)*  
[Jean-claude.roussel@airbus.com](mailto:Jean-claude.roussel@airbus.com)



**Short biography :** Systems Engineering Senior Expert with 37 years of experience in different Aeronautic and Space Programs within Airbus, I am presently in charge of Technology Roadmap Planning at Airbus Corporate Technical Office in Toulouse since Jan 2017. I have been working the last 8 years in the Corporate Research Center of Airbus on various Systems Engineering research projects and was a permanent member of the Airbus Systems Engineering Steering Committee which defines the strategy of Systems Engineering for the company.

I have been successively in charge of Configuration Management, Project Management and Systems Engineering for most of the new aircraft developments within the Airbus business unit (from A320/A319, A330/A340, A380, A400M till A350 program) and some years on space programs for ESA (European Space Agency) within the Astrium (today Airbus Defense and Space) business unit. My career began at Airbus in 1981 by developing Product Data Management application and data exchange standard for CAD/CAM (Computer Aided Design/Computed Aided Manufacturing) tools.

President of AFIS (Association Française d'Ingénierie Systeme) , the French part of INCOSE (International Council on Systems Engineering Chapter) in 2007 and 2008 and received the Gold Circle Award of INCOSE.

Technical Director of INCOSE from Jan 2011 till Jan 2013, I have been elected Director of EMEA (Europe, Middle East, Africa) Sector of INCOSE in Jan 2014 (till Jan 2017). I am a member and co-author of the BKCASE project (Body of Knowledge and Curriculum to Advance Systems Engineering) launched in Dec 2009.

Member of PMI (Project Management Institute) in 1999.

I am certified Expert Systems Engineering Professional (ESEP) by INCOSE

Born in 1957, I am a graduated Engineer (1980) in Computer Science from Polytech' Lille.

# INCOSE : Who We Are

- A not-for-profit membership organization founded in 1990 and dedicated to systems engineering
- Over 14,700 members in government, industry, and academia
  - Spanning aerospace & defense, transportation, health care, energy, and beyond
  - 67 local/national chapters and members in 58 countries

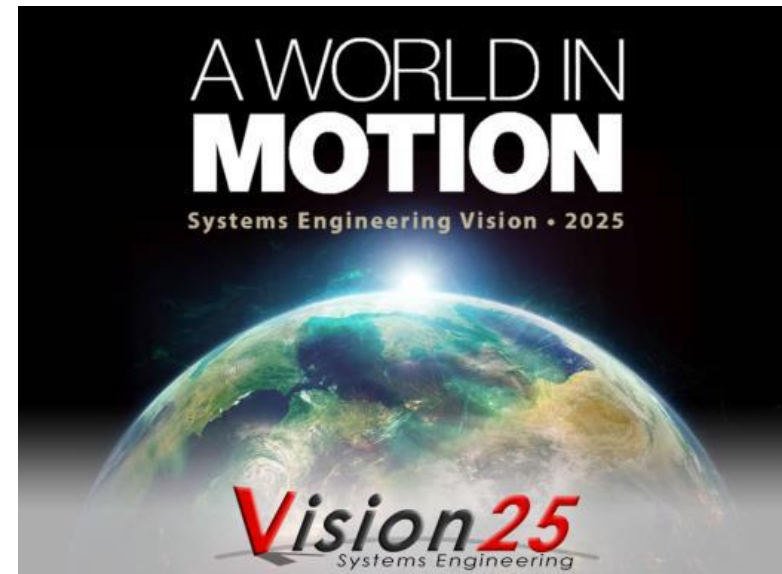
Learn more at [www.incose.org](http://www.incose.org)

# INCOSE Mission, Vision and Goals

- **Mission:** To address complex societal and technical challenges by enabling, promoting, and advancing Systems Engineering and systems approaches.
- **Vision:** A better world through a systems approach.

## Goals

- ✓ **focal point** for dissemination of systems engineering **knowledge**.
- ✓ promote **international collaboration** in systems engineering practice, education, and research.
- ✓ assure the establishment of competitive, scalable **professional standards** in the practice of systems engineering.
- ✓ improve the **professional status** of all persons engaged in the practice of systems engineering.
- ✓ encourage governmental and industrial support for **research and educational programs** that will improve the systems engineering process and its practice.

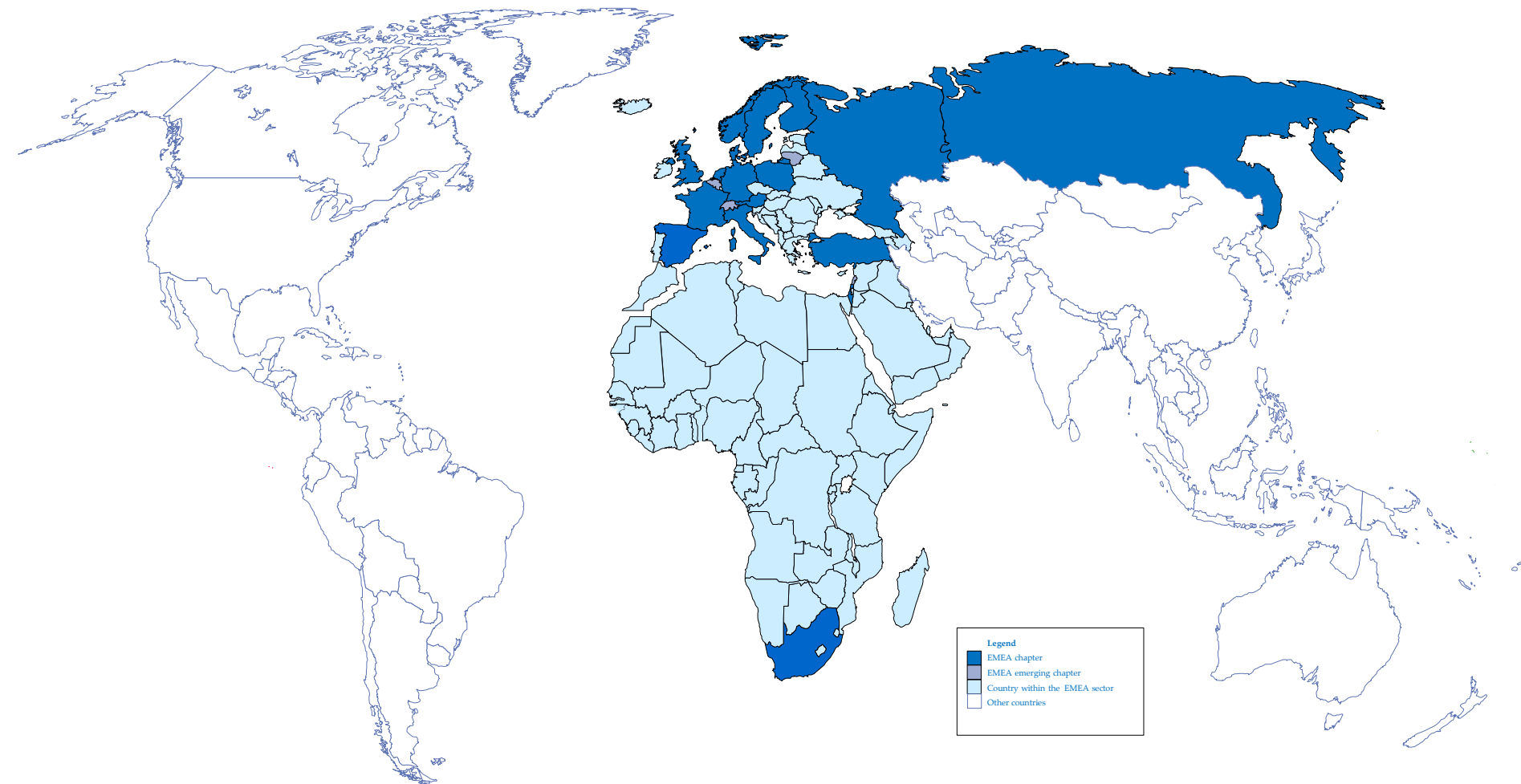


# In INCOSE, We Value :

- **Systems Thinking** – thinking and acting to apply systems approaches to address complex challenges and thus to realise successful sustainable solutions.
- **Pioneering and Innovation** – taking opportunities ourselves or with partners to evolve systems approaches to meet future challenges.
- **Learning and Development** – life-long learning with a changing world through education and continuing professional development, covering both technical and leadership competencies.
- **Respect, Diversity, Collaboration** – building and maintaining respectful relationships internally and externally in order to enable effective collaboration across the diverse community.
- **Individuals** – the importance of people, their intellect and influencing skill, to support complex decisions and to deliver enduring change.
- **Volunteerism** – volunteers and staff working together to achieve our objectives and to deliver benefit to our members, individuals and society.

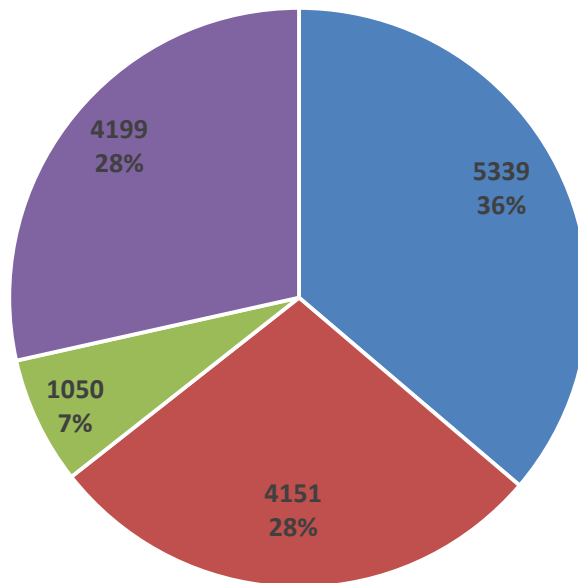
# INCOSE Chapters

## EMEA Sector



# INCOSE Chapters EMEA Sector

- AMERICAS - 5339 members 44 chapters
- **EMEA - 4151 members 16 chapters**
- ASIA-OCEANIA - 1050 members 7 chapters

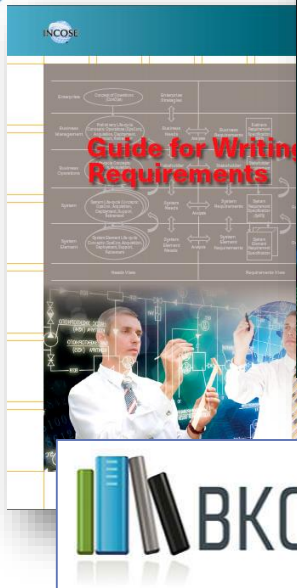


■ Americas ■ EMEA ■ Asia-Oceania ■ CAB

- Denmark
- Finland
- France
- Germany
- Israel
- Italy
- Netherlands
- Norway
- Poland
- Portugal (Emerging)
- Russia
- South Africa
- Spain
- Sweden
- Switzerland
- Tunisia (Emerging)
- Turkey
- United Kingdom

*Situation on 16<sup>th</sup> May 2017*

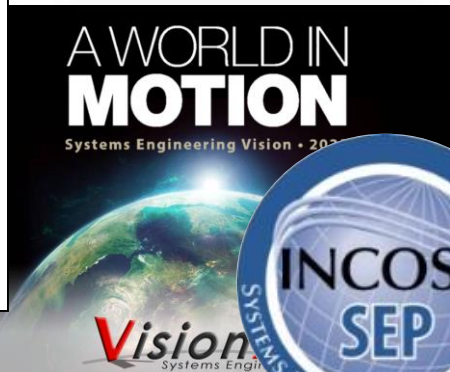
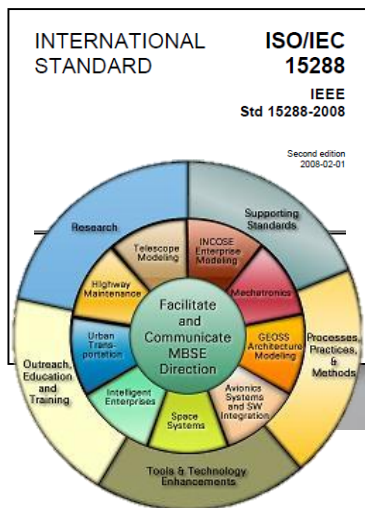
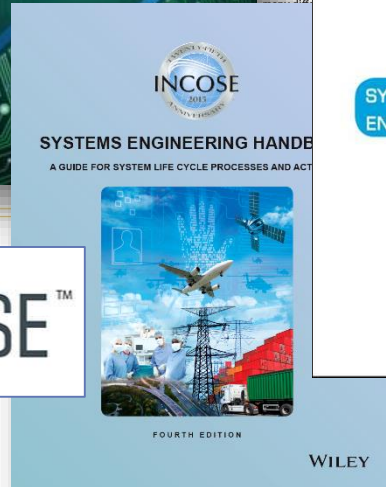
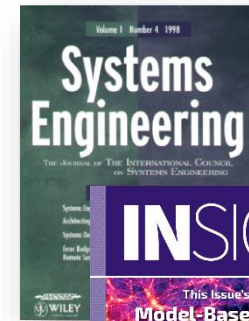
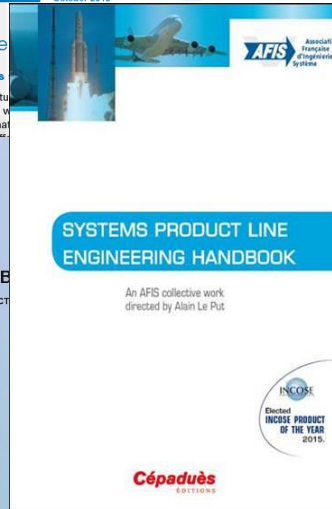




Issue 1.0  
October 2010



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# INCOSE Technical Working Groups

Agile Systems	Oil & Gas
Architecture	Ontologies
Automotive	Power & Energy Systems
Biomedical / Health Care	Process Improvement
Complex Systems	Product Line Engineering
Cost Engineering	Project Management – Systems Engineering Int.
Defense Systems	Requirements
Global Earth Observation SoS	Resilient Systems
Human Systems Integration	Risk Management
Information Systems	Space Systems
Infrastructure	Standards
Intelligent Enterprises	Systems of Systems
Lean Systems Engineering	Systems Safety Integration
SE Management	Systems Security Engineering
Measurement	Technology Life Cycle
Model-Based Conceptual Design	Transportation
Model-Driven System Systems	Verification & Validation, ....

For more information or the complete list, visit <http://www.incose.org>  
follow Home>Advancing the Practice>Technical Operations

# Top 10 priorities of EMEA Sector

1. MBSE
2. SE Training
3. Agile SE
4. Requirements / Product Line
5. System of Systems
6. Competencies
7. Lean SE
8. Architecture
9. Model Based Conceptual Design
10. Complex Systems

# Main EMEA contributions to INCOSE WG (Extract from Matrix WG / Chapters)

Chapter		France	Italy	Russia	Israel	United Kingdom	Poland (emerging)	Germany	Spain	Netherlands	South Africa
Chapter		20	15	15	13	14	8	9	12	3	3
<b>Topic/Working Group</b>	12	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<b>Model-based Systems Engineering (MBSE) Initiative</b>	9	AFIS MBSE WG	Chapter members participating in the WG	strong interest except SysML models	Model-based Systems Engineering (MBSE)-need more knowledge & expertise	UK MBSE WG		MBSE WG and additional WG working on SysML 2.0	Gaining momentum in Spain	Startup MBSE WG in December	
<b>Training WG</b>	8	AFIS Training & Competence WG		Systems engineering education	Training & Educating WG		Training - key topic for our members		SE Education is a very important issue in Spain, and one of our main priorities to be promoted from the Chapter	WG EDU (Education)	An active SE Training Working
<b>Agile Systems and Systems Engineering WG</b>	8	SE Management WG	Some Chapter members interested in topic; potential for local/Sector WG		Agile Approach & Agile SE are important topics for our members	Agility - key topic for our members	Agility - key topic for our members	2 WGs for "non complex SE" & Agil application	Driving some interest even for safety-critical applications		
<b>Requirements WG</b>	5		Chapter members participating in the WG			Requirements - key topic for our members	Requirements - key topic for our members		Requirements is key topic for our members		
<b>System of Systems WG</b>	5	AFIS SoS & Service - Architecture WG	Chapter members participating in the WG	regular topic of discussion	SoS is an important issue for our members	Chapter members participating in the WG, including co-chair					
<b>Competency WG</b>	4	AFIS Training & Competence WG	Chapter members participating in the WG			Competency, Professionalism, CPD - key topic for our members			SE competency and SEP Certification are important topics for our members		
<b>Lean Systems Engineering WG</b>	3		Chapter members participating in the WG		Lean SE is an important issue for our members		Lean SE WG - maybe (with "Bo" Oppenheim)				
<b>Architecture WG</b>	5	AFIS SoS & Service, Architecture WG		Architectural styles, architectural languages (not SysML)		UK Architecture WG		Functional Architecture WG			
<b>Model-based Conceptual Design WG</b>	3	AFIS Research & Innovation in SE WG	Chapter members participating in the WG	potential interest, not knowing much about it							
<b>Complex Systems WG</b>	3		Some Chapter members interested in topic; potential for local/Sector WG		Complex Systems - key topic for our members				Complex Systems - key topic for our members		

# Main EMEA events in 2017

EMEA Chapter	Title of the event	Type of event *	Date	Duration	Location	Language
Denmark	Nordic Systems Engineering Tour 2017	Seminar	15-16-17-18-19 May 2017	1 day	Copenhagen 17. May 2017	English
Finland						
France (AFIS and CESAMES)	Third Collaborative Engineering Day	Thematic day	15 June 2017	1 day	Paris	French
France (AFIS)	Model based V&V	Workshop	12 January 2017	1/2 day	Grenoble	French
France (AFIS)	Systems Engineering and health systems	Thematic day	20 April 2017	1 day	Nîmes	French
France (AFIS)	SESE 2017: France step	SE Tour	29 May	1 day	Paris	English
France (AFIS)	Architecting & MBS	Thematic day	1 day TBD from 19 to 23 June 2017	1 day	To be defined	French
France (AFIS)	RobAFIS 2017	Robot competition	December 2017	2 days	To be defined	French
France (CSDM)	CSDM 2017	Conference	Dec-17	2 days	Paris	English
Germany (GfSE)	Local evening events	Chapter Meeting	monthly	Evening	Hamburg, Munich, Paderborn, etc	German
Germany / EMEA	EMEA 2017 International Workshop	Sector Workshop	19-21 Sep 2017	2 days	Mannheim, Germany	English
Israel (ILTAM)	Monthly lectures, seminars, working groups	Chapter Meeting	Monthly	1-5 days	Israel	Hebrew
Italy	CIISE 2017 SESE 2017 – Italy step	Conference SE Tour	Nov-17 30 May 2017	1 day 1 day	Napoli Rome	English
Netherlands	Monthly lectures	Chapter Meeting	Monthly	Evening	Various in NL	Dutch
Norway	KSSE 11th Kongsberg SE Event	Conference	Jun-17	1 day		English
Norway	ALSSE Tour - Air, Land, Sea SE Tour	SE Tour	Sep-17	1 day	Oslo, Norway	English
Poland	Lean Systems Engineering	Workshop	3-5 Januray 2017	3 days	Cracow	English
Poland	Nordic Systems Engineering Tour (NoSE 2017)	SE Tour	19 May 2017	1 day	Warsaw	English
Russia						
South-Africa	13th Annual INCOSE SA Systems Engineering Conference	Conference	11-13 October 2016	3 days	CSIR ICC, Pretoria	English
Spain	SESE 2017: Spain step	SE Tour	31 May	1 day	Madrid	English
Sweden	Nordic Systems Engineering Tour (NoSE 2017)	SE Tour	16-May	1 day	Stockholm	English
	ALSSE Tour - Air, Land, Sea SE Tour	SE Tour	Sep-17	1 day	Stockholm	English
Switzerland	SWISSED17 - The Swiss Society of Systems Engineering Day	Conference	42982	1 d	Zürich	English
Tunisia						
Turkey						
UK	Training day	Tutorial	42886	1 day	Bristol	English
UK	ASEC 2017	Conference	14-15 November 2017	2 days	Liverpool	English

# Perspectives for INCOSE

- **Extension of Systems Engineering usage**
  - To other domains such as Transportation, Energy, Healthcare, Smart cities,...
  - Fully Integrated with Project Management
  - With all actors of the Extended Enterprise, including VSE/SME.
- **Full deployment of MBSE** at wide scale
- Promotion of **Systems Thinking** to support complex systems and societal situations
- Recognition of **Systems Engineering as core competence** in the Academic and Industrial worlds
- Maintain, update and promote a **Systems Engineering Vision**



**I wish you a good and fruitful day**

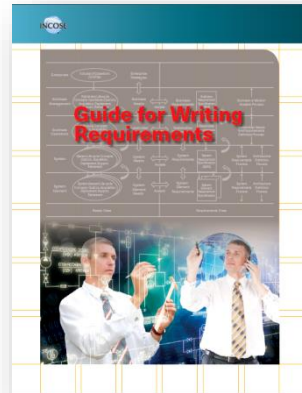
**Enjoy SESE 2017 !**

In any question or comment, please address it to  
[Jean-claude.rousseau@airbus.com](mailto:Jean-claude.rousseau@airbus.com)



# Some Successful Experiences....

## Requirement WG



## The Guide for Writing Requirements

## Lean Systems Engineering WG



## Lean Enablers for Managing Engineering Programme Joint Publication PMI-INCOSE-MIT

## PMI-INCOSE Alliance (Partnership with MIT)



## Guide to the Systems Engineering Body of Knowledge



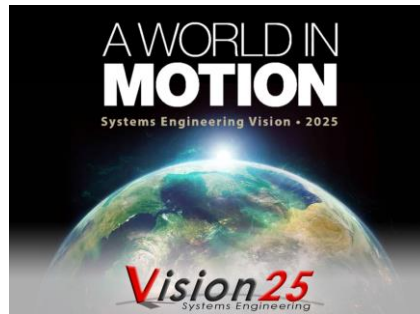
## Body of Knowledge and Curriculum for Advanced Systems Engineering (Partnership with IEEE and SERC)



## Graduate Reference Curriculum for Systems Engineering

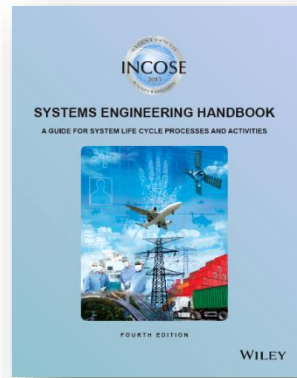
# Some Successful Experiences....

SE Vision 2025

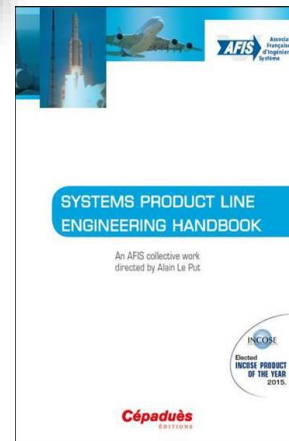


The Systems Engineering Vision 2025

The Systems Engineering Handbook (V4)



Product Line WG



Product Line Engineering Handbook