Our Central Summit Issues and Concerns

Technology and Complexity Growth

Systems Evolution, Implementation and Education

Do we have the Institutions & Human Capital to cope?

Succesful Transformations and complex Systems All need ….

Life-cycle Systems Architecting, Engineering and Management

to obtain an early understanding of critical realization issues, such as risks, cost, schedules, sustainability, cyber-security, business opportunities, and societal impacts

Integrated Implementation Approaches

to realize trusted system concepts and designs for seamless interoperability

System Competencies at most every Product Tier

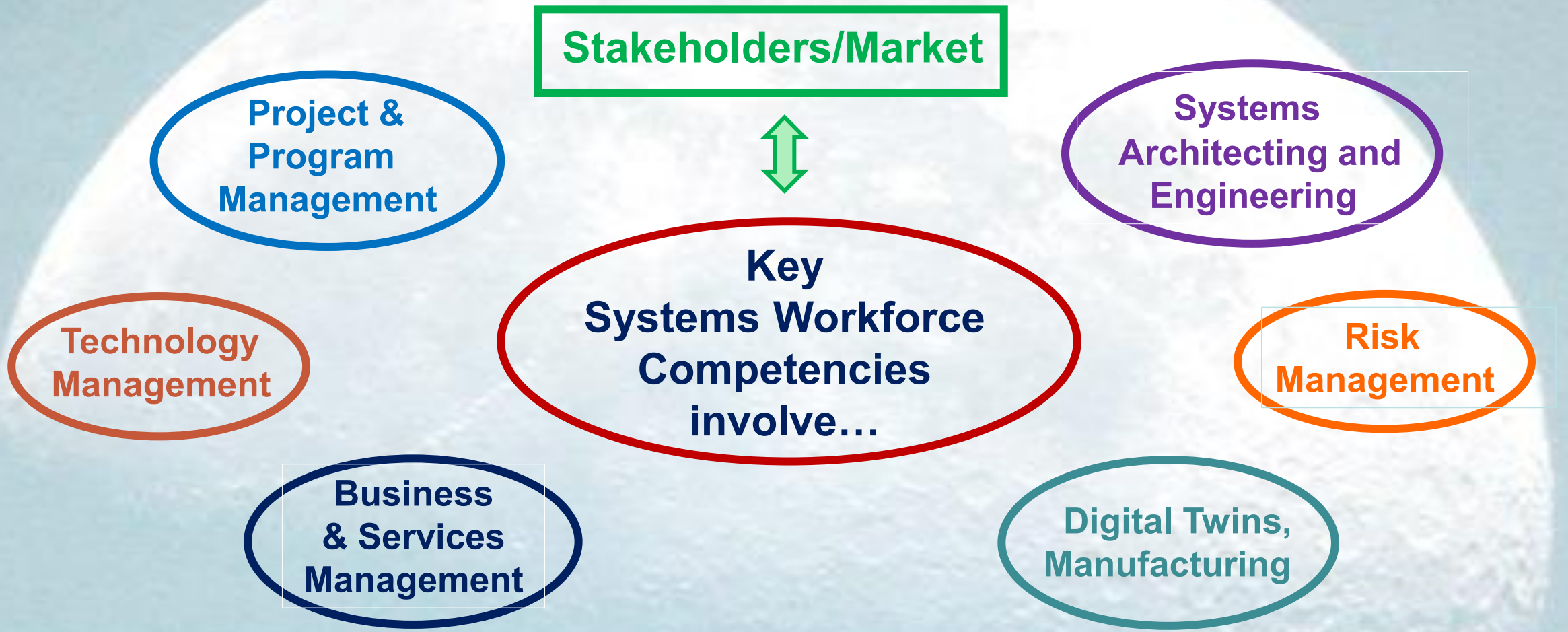
to ensure successful realization for OEM integrators & supplier teams

Pragmatic System Realization Teams

with an agile „can do“ attitude, pushing for simple solutions & tailored risks

The multiple Core Functions of a Systems Workforce

with Focus upon Market Success



All deal with Sustainability, Cyber-Security, Regulations & Supply Chain Issues

Acquiring System Competencies is a life-long Journey

From Childhood to experienced Teams

Schools



University

Postgraduate and Training



„Grey Beards“ & Teams Systems Competencies

→ Are our current mostly „vertical“ Education Models up to Date?

Do we need a Paradigm Shift?

16.00 Summit Conclusions

Summit Chair: Prof Hester Bijl, *Rector Magnificus Delft University of Technology*

***16.05 Themes and Special Sessions Recommendations* by Chairs & ACs**

Q & A

17.00 "Delft Systems Declaration" Discussion and Adoption, *Heinz*

17.30 Post Summit Action Plan, Discussion & Commitments, *Heinz*

17.45 Concluding Remarks & Thanks *by Chair, HighTech Program, Brainport, tbd, Summit Architect*

18.00 END OF SUMMIT, Closing Reception

Priciple Summit Outputs

“Delft Systems Declaration”

Top-level Recommendations with supporting Background

for Executives in Governments, Agencies, Industry, Education, Professional Organizations

(Must fit onto 2 pages)

“Summit Themes Recommendations”

Key Findings summarized for each Theme

for System Leaders, Experts, Students

“Delft Systems Declaration” - Introduction

Executives and experts were deeply concerned about the rapidly growing complexity of systems and technology, and the challenge of aligning and managing it;

the shortage of systems competencies, which are engines of innovation and economic growth.

- **Noting that systems have predominantly become software- and AI-enabled systems of systems, they stressed that market success depends more than ever on a workforce capable of integrating multiple disciplines, such as engineering, risk, technology, manufacturing, business and project management. They underlined the urgent need for strategic initiatives to build and strengthen systems competencies in government, industry, education and professional organizations.**

- **The Delft Systems Declaration and its supporting documents respond to many of these concerns……**

Declaration addresses 5 Categories

Strategy, Leadership and Organizational Culture

Education and Competencies

Learning Environments and Digital Infrastructure

Artificial Intelligence

Professional Societies

Strategy, Leadership and Organizational Culture

1. **Make your systems workforce a strategic priority.**

2. **Treat systems thinking as an over-arching capability.**

3. **Grow systems leaders through real experience and tailored career paths.**

4. **Empower systems teams.**

5. **Cultivate Human-centric Leadership**

Education and Competencies

1. Teach systems thinking early and make it mandatory in schools and universities.

2. Prepare engineers for systems of systems.

3.

4. Teach System Trustworthyness and Resilience

Intensify collaboration between education and industry.

Learning Environments and Digital Infrastructure

1. **Expand access to shared testbeds.**

2. **Build interoperable digital engineering environments.**

Artificial Intelligence

1. Make AI literacy core to technical education.

2. Preserve human judgment and accountability while using supporting tools.

3. Build an AI-cognizant safety culture and monitor system-embedded AI in operations.

Professional Societies

1. Strengthen cooperation among professional societies.

Tentative Ideas for a post Summit Action Plan

Objectives

Inform Decision Makers and the global Systems Community

on the Summit Recommendations & promote Adoption/Implementation through a concerted Communication and Promotion Initiative

How can our Findings create Impact beyond the Summit?

How can you help?

Promote the Summit findings within your organizational environment, in professional networks, conferences, peer and customer discussions, articles in professional and public media, etc. etc.

Become a „Systems Ambassador“







CERTIFICATE OF ATTENDANCE
SYSTEMS WORKFORCE SUMMIT

YES, I SUPPORT THE

„DELFT SYSTEMS DECLARATION“

AND AGREE TO BECOME A

SYSTEMS AMBASSADOR



THROUGH COMMUNICATING AND ADVOCATING THE APPLICATION OF THE SUMMIT RECOMMENDATIONS IN MY PRFOFESSIONAL ENVIRONMENT

WITNESSED, 28 OCTOBER, 2026

PROF. DIPL-ING. HEINZ STOEWER, M. SC.
SUMMIT ARCHITECT

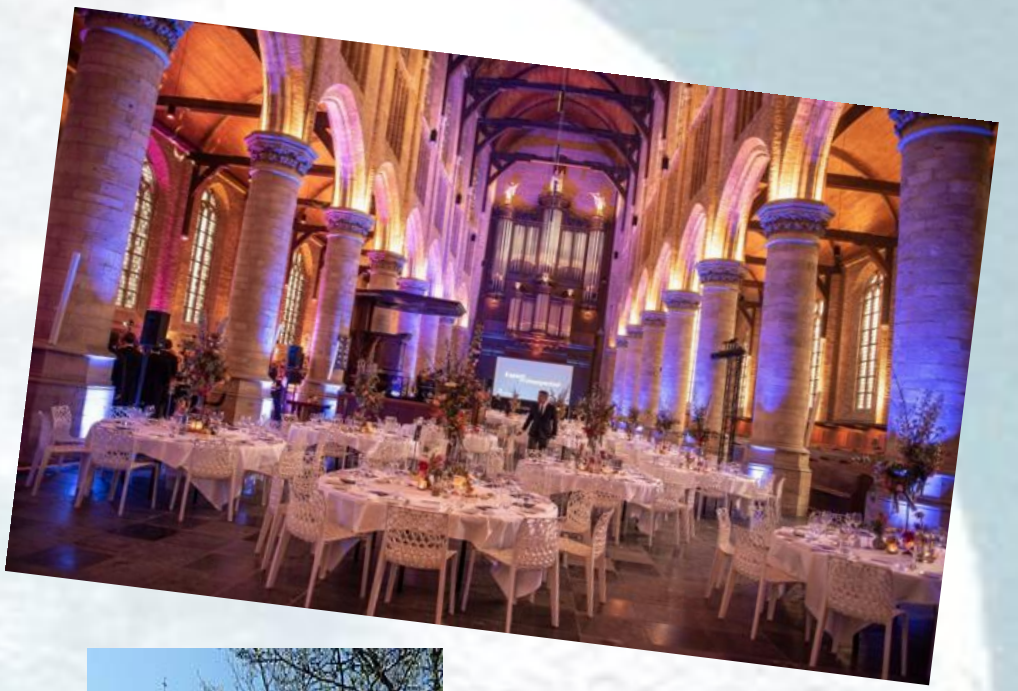
PROF. DR. IR. HESTER BIJL
SUMMIT CHAIR, RECTOR MAGNIFICUS

DELFT UNIVERSITY OF TECHNOLOGY

Many Thanks for your inspiring Contributions

We hope you have enjoyed being with us!









Summit Closure, Prof. Heinz Stoewer, Summit Architect, Delft University of Technology, Oude Kerk, 28. 10. 2026



Summit Introduction, Prof. Heinz Stoewer, Summit Architect, Delft University of Technology, Oude Kerk, 28. 10. 2026



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Our Summit Organization

Five Themes, multiple Viewpoints, a Declaration & Actions



Welcome to our global Systems Summit



We are here
Our Earth,
a miniscule point in a huge System of Systems of Systems of ….

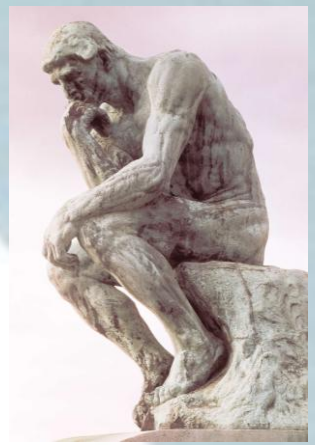




Welcome to the Netherlands

and historic Delft

What kind of „Systems“ Message did my Charts imply?



ANYBODY‘S SYSTEM

IS SOMEBODY‘S

SUBSYSTEM !

A system is what you define with Boundaries & Interfaces

Examples :

- **Microchip – Computer – Internet**
- **Suspension – Platform – Automobile – Mobility Infrastructure**
- **Rocket Engine – Launch Vehicle – Mission to Moon**
- **Cockpit - Aircraft – Carrier – Naval Fleet – Network centric SoS**

How do we make Systems Decisions ?

→ We combine the Art of Iteration with Facts and Experience

Systems Decisions

Physics, Mathematics, Engineering Sciences

Social Sciences and Experience Judgements (Intuition)



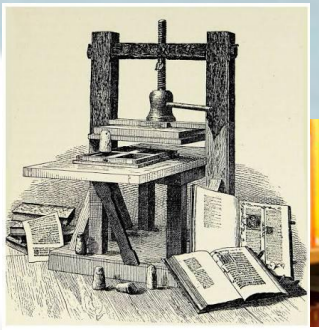
May I ask where you studied Engineering?

Examples:

- Cost and Schedule – tools are empirical & decisions experience-derived
- Test and Verification – timing, facilities, analysis input qualitiy maturity assessments
- Behaviour of new technologies, trustworthyness of supplier judgements
- Are Interface interactions of new components (hard- and software) predictable?
- Market stability, competition, achievable prices are frquently changing with time

Technology and Complexity Growth

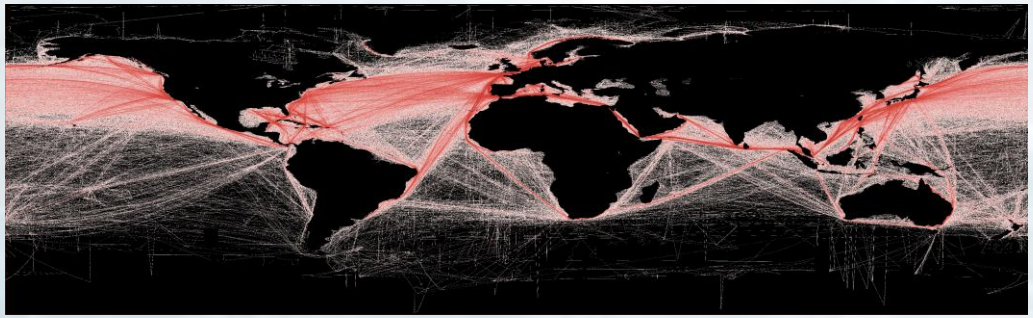
- From handwritten documents via Guttenberg‘s printing technology to books and knowledge multiplication





- From horses to automobiles, trains, airplanes, satellites and global mobility









→ Technologies have enabled Human Progress and improved our Quality of Life. But they have also increased Complexity, and often leave the „Disadvantaged behind“

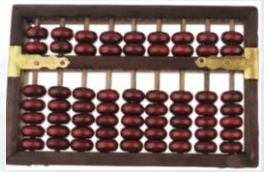
Technology and Complexity Growth

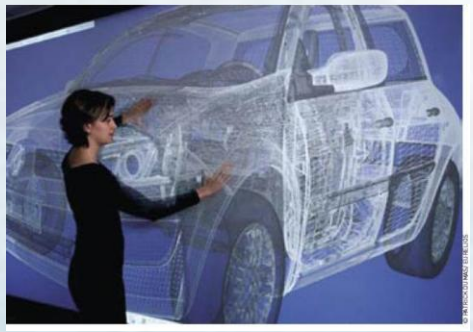
- From Grocery Shops to modern Supermarkets
  and global food supply networks





- From Abacus, to Slide Rules, PCs, Mobile Phones,
  Model-based Design Facilities, and AI Data Centers







- → Technologies create Opportunities for Innovation and economic Growth,
  but some need Security & Safety Regulations

Technology and Complexity Growth

Two Impulse Lectures will highlight Applications and Impacts



Evolving digital Technologies
driving industrial and social Innovations
Arnaud Hubaux, Head of AI Program & Strategy ASML

Cybersecurity,
a critical growing Element of Technology and industrial Security
Prof. Larry James, CEO & Co-Founder KAIperShield

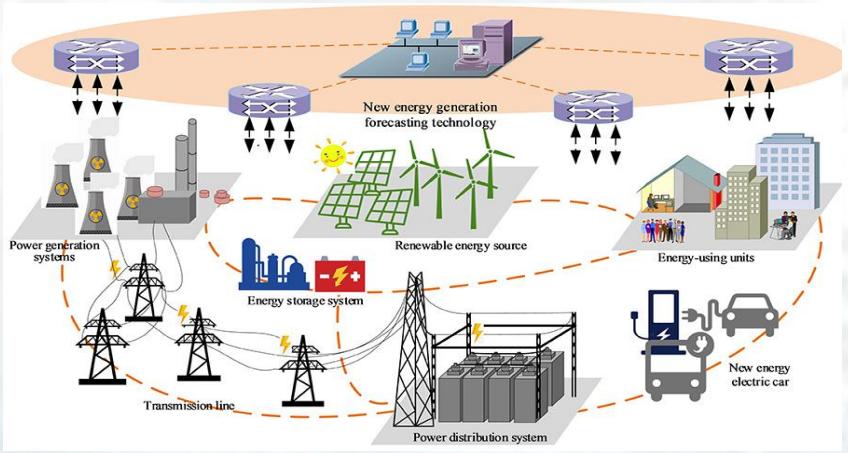
Quantum Computing
is likely to have strong impacts upon future Systems, especially when combined with AI !
QC is mentioned above! Applications lecture forgone since QC leaders meet in South Africa

Innovation and Economic Systems Transformations

Smart Agriculture



Sustainable Energy

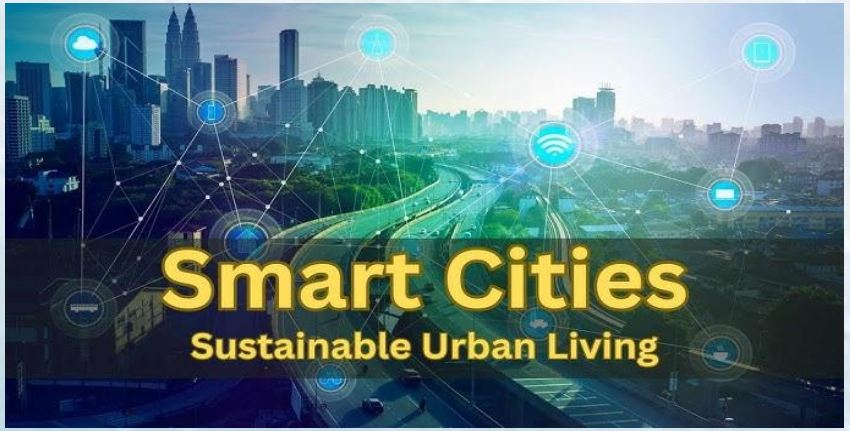


Health Services

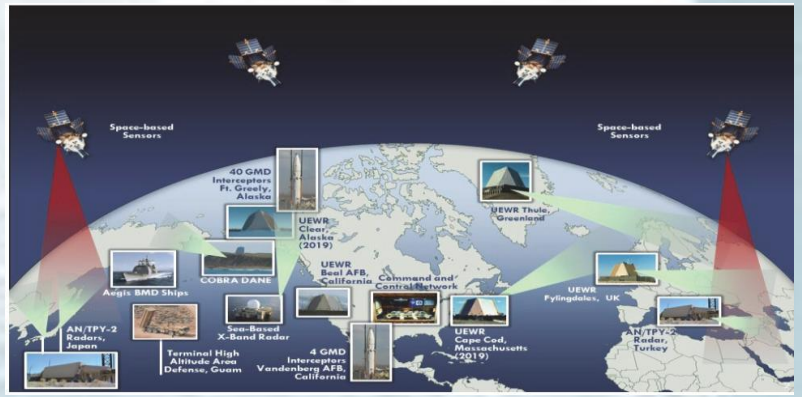


Mobility





Space & Security



→ Are they tackled with an „end-to-end“ Systems Architecture Mindset?

…and with competent agile System Workforce Teams with delegated authority?

Typical System Products from our daily Life

What do these have in common ?

















Most all have become complex, interdependent and self-adapting software/AI-defined System of Systems (SoS)

All need multi-disciplinary cooperation of specialists, system integrators and program managers at equipment, subsystem and system levels