



ROYAL INSTITUTE  
OF TECHNOLOGY

# ICES anniversary conference (day 2) – ICES introduction

Martin Törngren



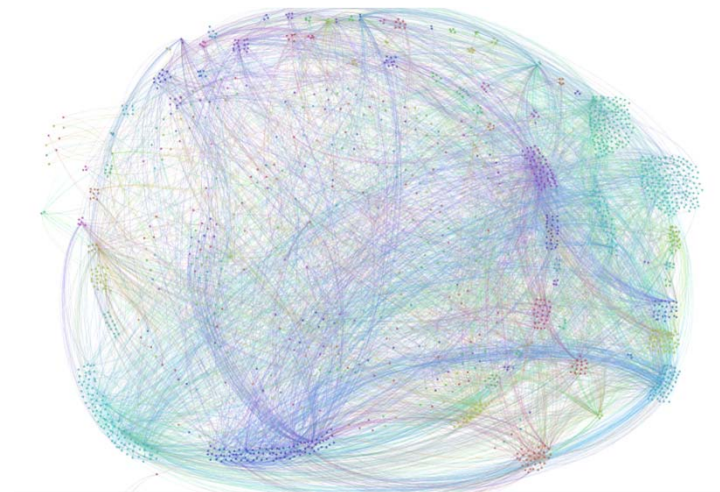
## Outline

- ICES fast facts and 10 year evolution
  - Updated Vision and goals
- Way of working and ways to engage

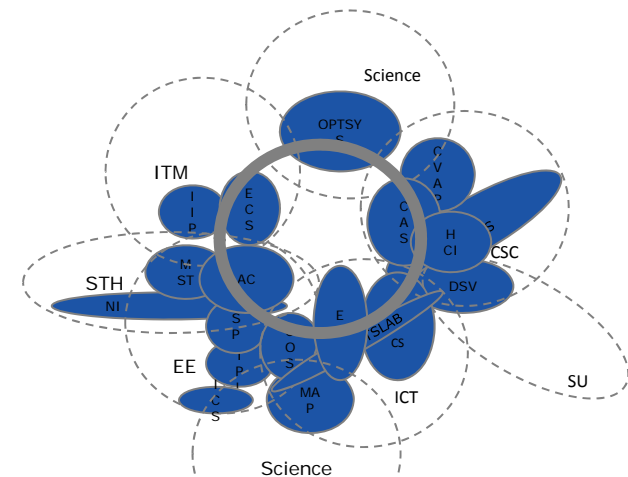
# Opportunities and Challenges



Smart systems  
in everyone's  
hands



Complexity and new risks



Knowledge management

## ICES in relation to other centers?

- Some 50+ centers at KTH - Most are research centers!
  - ICES is a "Collaboration center"
- Well positioned for the future
  - CASTOR: KTH center for strengthening SW technology and engineering, starting 2018 - [www.castor.kth.se/](http://www.castor.kth.se/)
    - Collaboration with Ericsson and Saab
  - WASP: Wallenberg AI, Autonomy and Software Systems Program - <http://wasp-sweden.org>
    - Long term research on autonomous systems
  - "Digitalization center" - Strategic research funding from government, to start 2019/2020
    - ~ 78MSEK extra funding/yr to KTH



# A prospering eco-system ... in software-intensive systems, catalyzing world class education, research & innovation

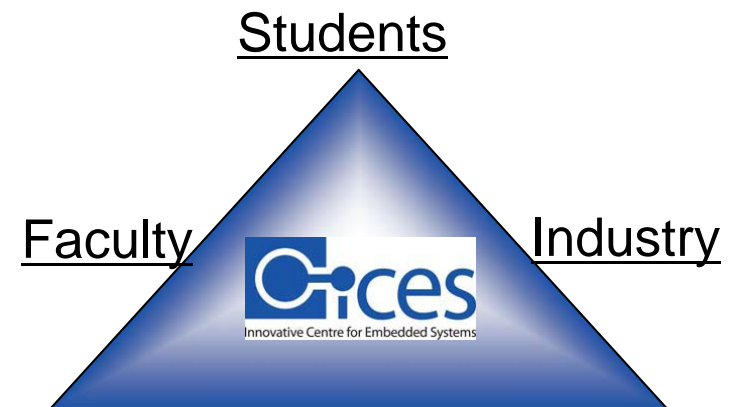


## Strategic objectives

- Focus: key concerns across industrial domains
- Network, competence provider and catalyst
- Create synergies; collaboration with KTH research centers and related networks

[www.ices.kth.se](http://www.ices.kth.se)

## Stakeholders



~ 30 industrial members and engagement with networks incl. INCOSE, Swedsoft, ARTEMIS-IA, THINGS and Smarter Electronics

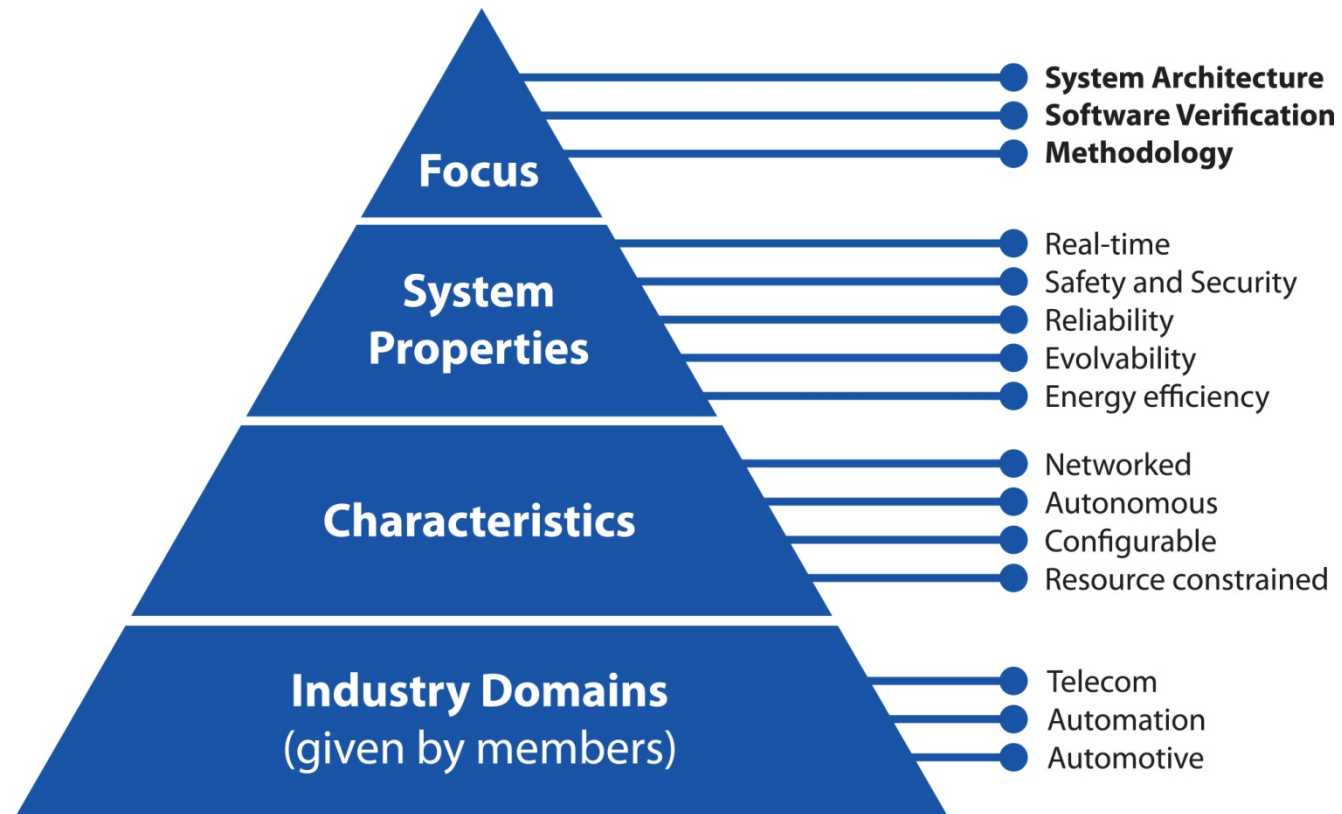


# Milestones and example achievements

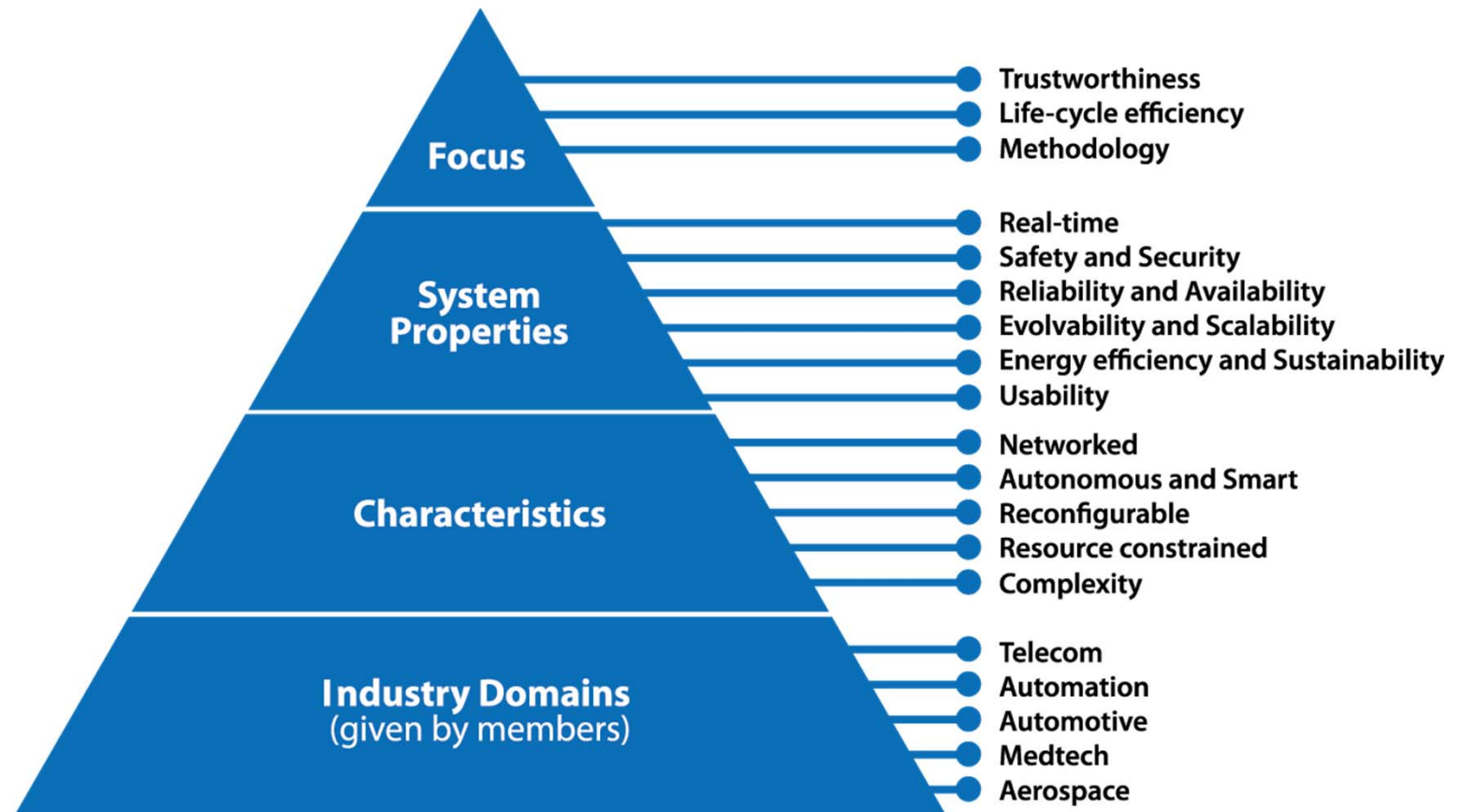


- 2008: Center established with 6 founding partners
- 2009: KTH joins the ARTEMIS industrial association; CESAR project
- 2010: iFEST ARTEMIS project starts, followed by more
- 2011: KTH embedded systems MSc program launched!
- 2011: Collaboration with INCOSE starts;
- 2011: ICES co-director
- 2012: ICES competence groups, network of networks
- 2013: R&D managers competence group started
- 2014: ICES meets IT and energy minister Anna-Karin Hatt
- 2015: SCSSS conference series starts in Stockholm!
- 2016: Systems engineering competence group started
- 2017: Research&higher education minister Helene Hellmark Knutsson
- 2018: Cont. Education initiative; ICES jubilee conference, Sept. 27-28

# ICES thematic areas - from 2009!



# ICES thematic areas - from 2018!





## ICES fast facts slide

- Number of direct organizational members
  - Gold: 7
  - Silver: 11
  - Bronze: 14
- Number of newsletter subscribers: 1 925
- Other networks with active collaboration
  - Incose – Systems engineering
  - ARTEMIS-IA
  - Swedsoft
  - Smarter electronics Vinnova innovation program
  - Others in progress:
    - CASTOR; Viable cities; Process-IT

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# How to benefit from and engage with ICES



- Newsletter
- Web page assets
  - Projects, education overview, resources
- Industrial and Academic contacts
- Workshops and conferences
- Work groups and competence groups

## Activities – work groups

- (i) Education and Student interaction,
- (ii) Continued Education,
- (iii) Marketing and Member involvement,
- (iv) Competence groups,
- (v) Learning Network,
- (vi) Management and cooperation,
- (vii) Interactions and catalyzing project

# ICES competence groups

- Architectures for autonomous systems
  - Appointment in progress!
- Embedded realtime systems
  - Contact: Zhonghai Lu, KTH
- Interoperability
  - Contact: Frédéric Loiret KTH/ITM
- R & D managers
  - Contact: Anders Eklund, Prevas
- Safety
  - Contact: De-Jiu Chen, KTH/ITM
- Security
  - Contact: "Panos" Panagiotis, KTH/EECS
- Testing of embedded systems
  - Contact: Karl Meinke, KTH/EECS
- Systems Engineering

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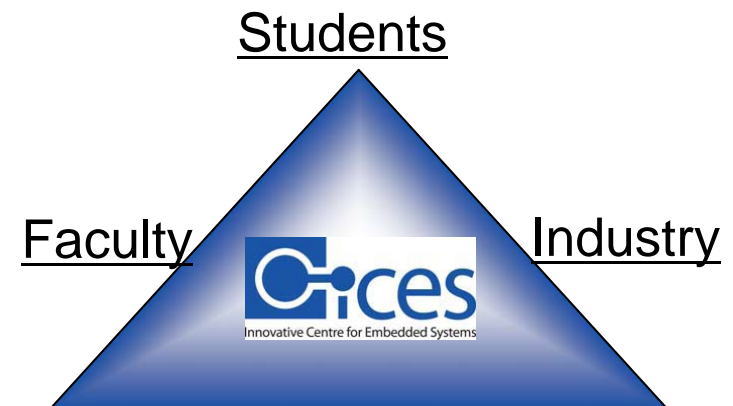
  - Contact: Erik Herzog

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**Contact and more information: [www.ices.kth.se](http://www.ices.kth.se)**