www.syssec-project.eu

SysSec: A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet

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Outline of the talk

- Security Challenges: What is the problem?
  - Hackers are getting more sophisticated
  - The impact of cyberattacks is getting larger
- What are we doing about this?
  - SysSec: 4-year NoE to consolidate Research in managing threats for the Future Internet

Outline of the talk

- Security Challenges: What is the problem?
  - *Hackers are getting more sophisticated*
  - The impact of cyberattacks is getting larger
- What will we do?
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Government: UK Parliament's PCs infected

Transportation: Cars out of control

Energy: No electricity

Defense: fighter planes grounded

Telegraph.co.uk

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French fighter planes grounded by computer virus

French fighter planes were unable to take off after military computers were infected by a computer virus, an intelligence magazine claims.

by Kim Willsher in Paris
Published: 11:43AM GMT 07 Feb 2009

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Done

Last but not least: Stuxnet!

Tailored specifically against SCADA systems, is the most recent demonstration that **not only** attacks are **sophisticated**, complex and well-coordinated

It also **demonstrates** that the bad guys:

- are very well-**equipped**

- have **ambitious** goals (cyber-physical systems)

Rootkit.Win32.Stuxnet geography
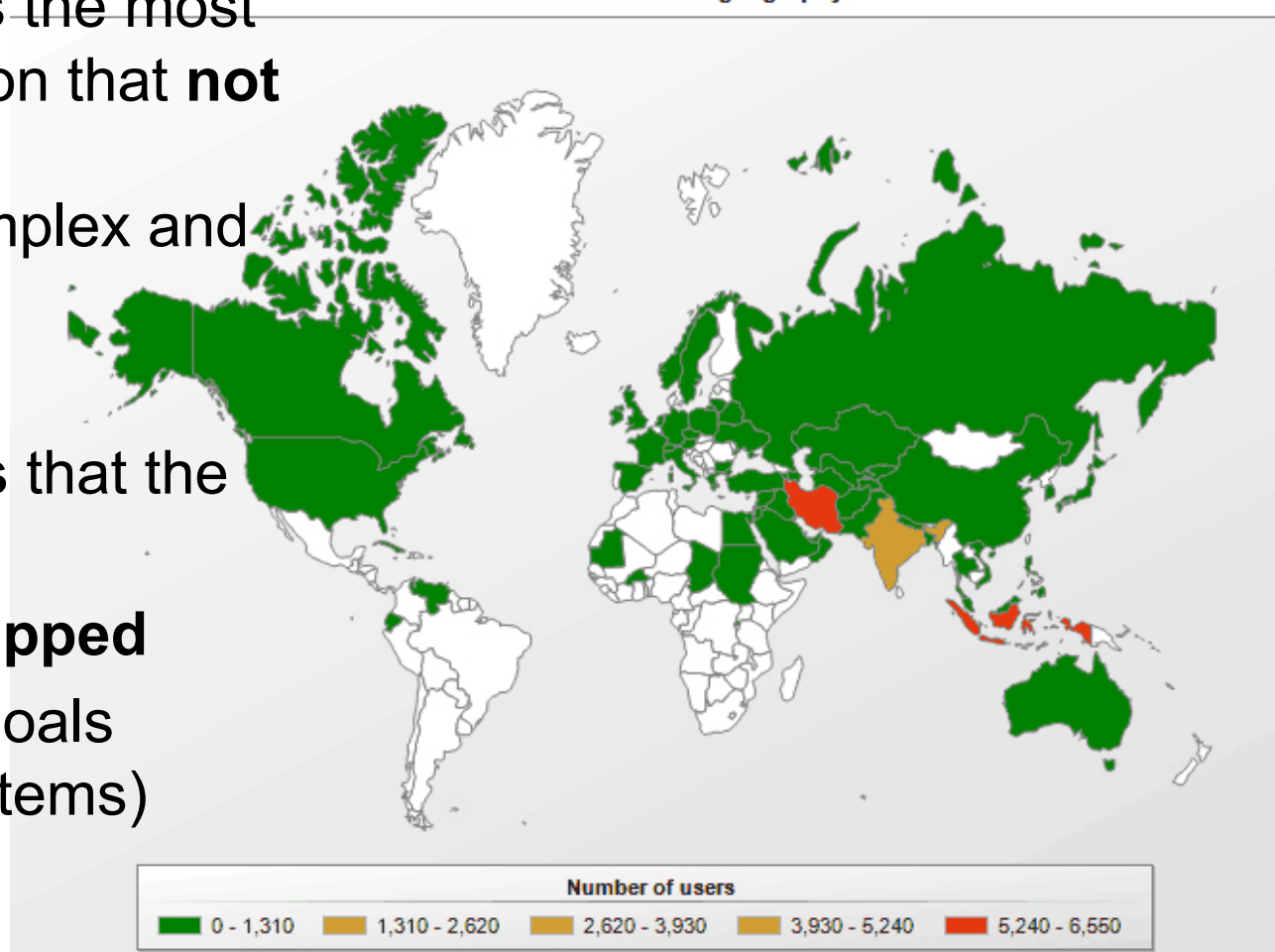
Number of users

0 – 1,310	1,310 – 2,620	2,620 – 3,930	3,930 – 5,240	5,240 – 6,550

Outline of the talk

- Security Challenges: What is the problem?

  - Hackers are getting more sophisticated

  - The impact of cyberattacks is getting larger

- *What will we do?*

  - *SysSec: 4-year NoE to consolidate Research in managing threats for the Future Internet*

Predicting "what's next"

- ## SysSec: managing threats and vulnerabilities for the future Internet

  - ### a NoE, 2010-2014

  - ### General approach

    - **Proactive solutions**

    - **Collaborate**

      – At a European level

      – With our international colleagues
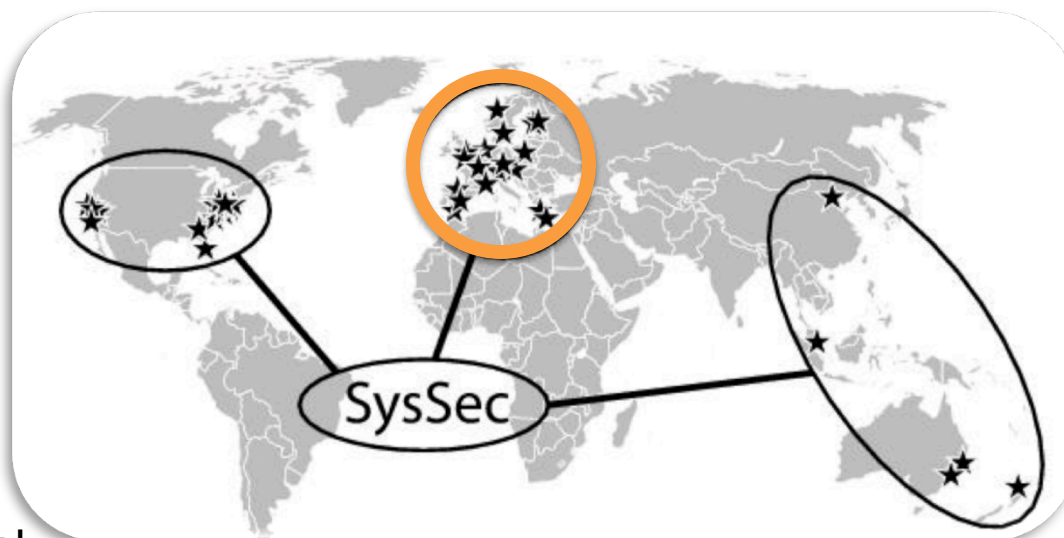
- Politecnico di Milano (IT)
- Vrije Universiteit (NL)
- Institute Eurecom (FR)

- IPP (Bulgaria)
- TU Vienna (Austria)
- Chalmers U (Sweden)

- UEKAE (Turkey)
- FORTH – ICS (Greece)

(see website for updated list)

- SysSec proposes a *game-changing* approach to cybersecurity:
  - Currently Researchers are mostly **reactive**:
    - they usually track cyberattackers *after* an attack has been launched
    - thus, researchers are always one step behind attackers
  - SysSec aims to break this vicious cycle
  - Researchers should become more *proactive*:
    - **Anticipate** attacks and vulnerabilities
    - **Predict** and prepare for future threats
    - Work on defenses *before* attacks materialize.

SysSec Aim and Objectives (I)

1. Create an active, vibrant, and collaborating **community of Researchers** with

   - the expertise, capacity, and determination to **anticipate** and mitigate the **emerging** threats and vulnerabilities on the Future Internet.

   - SysSec aims
     - to create a **sense of "community"** among researchers,
     - to **mobilize** this community,
     - to **consolidate** its efforts,
     - to **expand their collaboration** internationally, and
     - become **the single point of reference** for system security research in Europe.

SysSec Aim and Objectives (II)

2. Advance European Security Research well **beyond** the state of the art
   - research efforts are **fragmented**
   - SysSec aims to **provide a research agenda** and
   - **align their research activities** with the agenda
   - make SysSec **a leading player** in the international arena.

SysSec Aim and Objectives (III)

3. Create a **virtual distributed Center of Excellence** in the area of emerging threats and vulnerabilities.

   - By forming a critical mass of European Researchers and by aligning their activities,
   - A **leading role internationally**, empowered to undertake **large-scale**, ambitious and high-impact research efforts.

4. Create a **Center of Academic Excellence** in the area

   - create an education and training program targeting young researchers and the industry.
   - lay the **foundations** for a common graduate degree in the area with emphasis on Systems Security.

SysSec Aim and Objectives (IV)

5. Maximize the impact of the project by proactive **dissemination** to the appropriate stakeholders.

   - disseminate its results to international stakeholders so as to form the needed strategic partnerships (with similar projects and organizations overseas) to play a major role in the area.

   - dissemination within the Member States will
     - reinforce SysSec's role as a center of excellence and
     - make SysSec a beacon for a new generation of European Researchers.

TBA — **1st SysSec Workshop, co-located with DIMVA, July 2011**

6. Create Partnerships and **transfer technology to the European Security Industry**.

   - create a close partnership with Security Industry

   - facilitate technology transfer wherever possible to further strengthen the European Market.

How to collaborate with SysSec?

- Join our constituency (mailing list):
  - http://www.syssec-project.eu

- Contribute to the research agenda
  - Provide **feedback** on emerging threats
  - Share your **ideas** on **future** security issues

- Contribute to our systems security University curriculum
  - Contribute homeworks/exams
  - Contribute/use lab exercises
  - Teach some of the courses at your University
  - Share some of your course material

- **Become an Associated Partner**

Summary

- Hackers are getting more sophisticated

- The impact of cyberattacks is getting higher

- We need to collaborate to manage emerging threats on the future Internet

  - SysSec started on Sept 1st.

  - Help us define future security threats

  - Help us teach our students system security

  - **Join us** to break the vicious cycle of cyberattacks.

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http://www.syssec-project.eu
http://twitter.com/syssecproject

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