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

Government: UK Parliament's PCs infected

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Houses of Parliament computers infected with Conficker virus

The Houses of Parliament IT system has become infected with the Conficker computer virus, it has emerged, raising questions about possible security flaws at the Palace of Westminster.

By Matthew Moore
Published: 7:00AM GMT 27 Mar 2009

The Conficker virus has infected computers in the Houses of Parliament Photo: GETTY

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THREAT LEVEL

PRIVACY, CRIME AND SECURITY ONLINE

Hacker Disables More Than 100 Cars Remotely

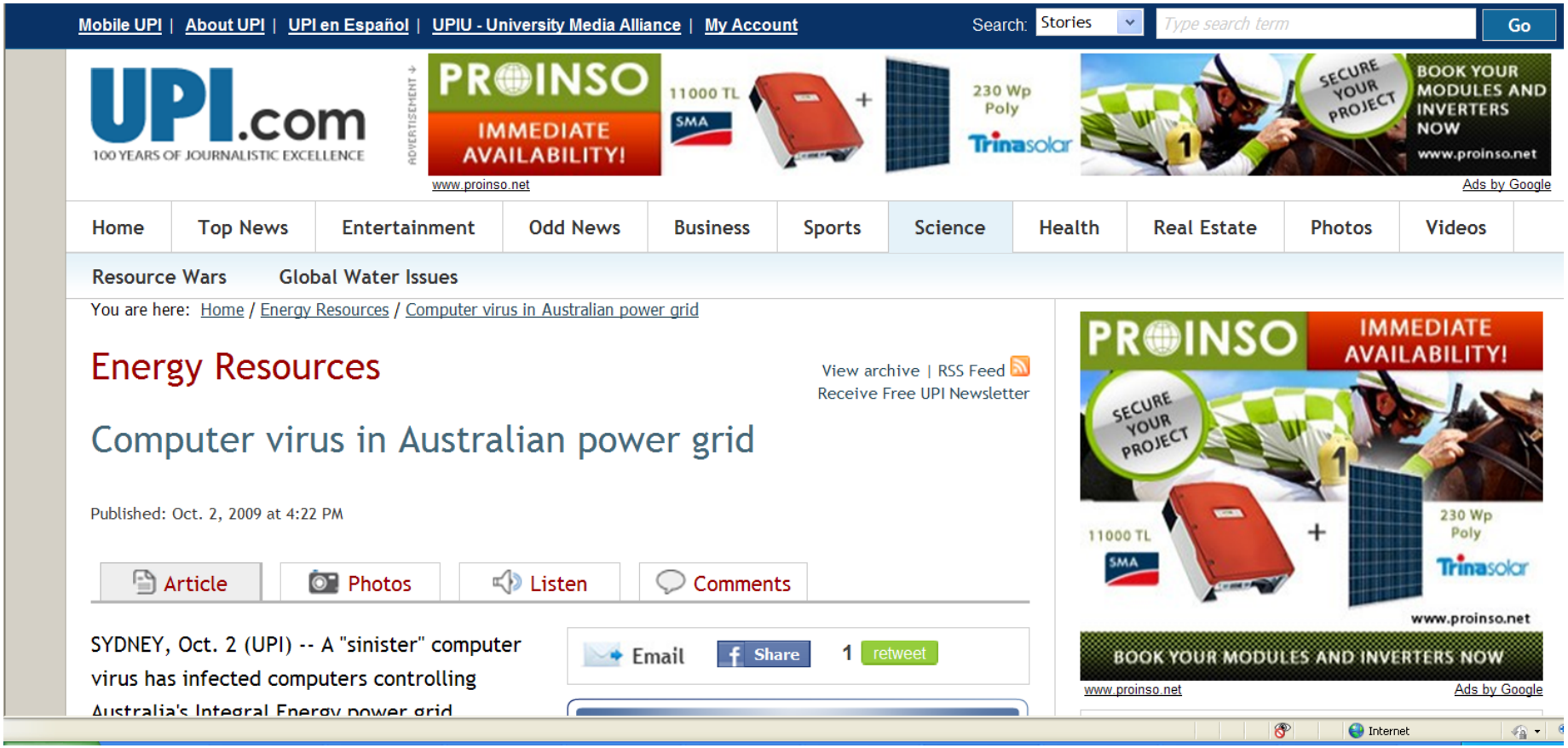
By Kevin Poulsen March 17, 2010 | 1:52 pm | Categories: Breaches, Crime, Cybersecurity, Hacks and Cracks

More than 100 drivers in Austin, Texas found their cars disabled or the horns honking out of control, after an intruder ran amok in a web-based vehicle-immobilization system normally used to get the attention of consumers delinquent in their auto payments.

Police with Austin's High Tech Crime Unit on Wednesday arrested 20-year-old Omar Ramos-Lopez, a former Texas Auto Center employee who was laid off last month, and allegedly sought revenge by bricking the cars sold from the dealership's four Austin area lots

Done

Energy: No electricity



Defense: fighter planes grounded

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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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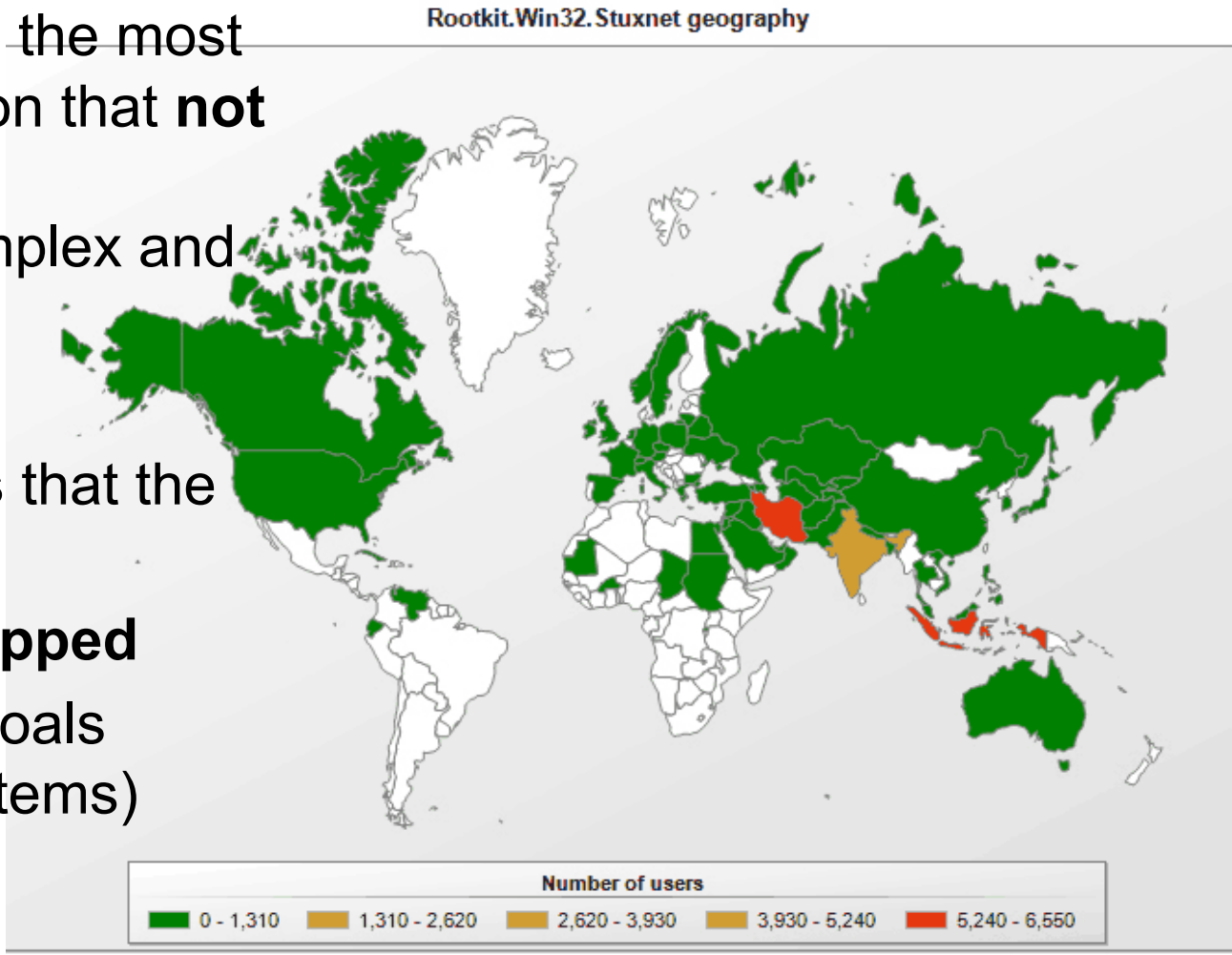
Last but not least: Stuxnet!

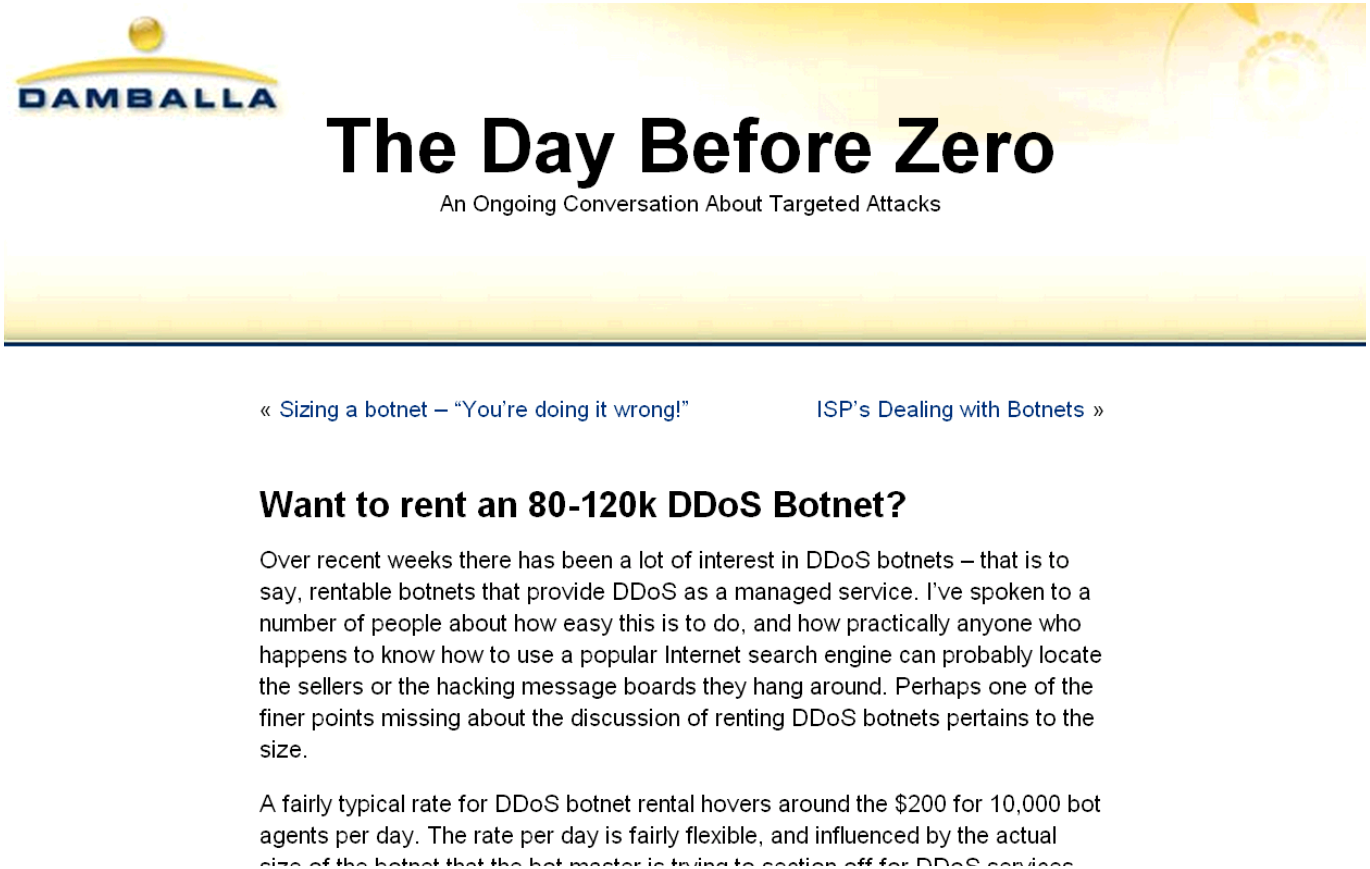
Tailored specifically against SCADA systems, is the most recent demonstration that **not only** attacks are **sophisticated**, complex and well-coordinated

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

- are very well-**equipped**
- have **ambitious** goals (cyber-physical systems)



Rent-a-botnet!



DAMBALLA

The Day Before Zero

An Ongoing Conversation About Targeted Attacks

« Sizing a botnet – "You're doing it wrong!" ISP's Dealing with Botnets »

Want to rent an 80-120k DDoS Botnet?

Over recent weeks there has been a lot of interest in DDoS botnets – that is to say, rentable botnets that provide DDoS as a managed service. I've spoken to a number of people about how easy this is to do, and how practically anyone who happens to know how to use a popular Internet search engine can probably locate the sellers or the hacking message boards they hang around. Perhaps one of the finer points missing about the discussion of renting DDoS botnets pertains to the size.

A fairly typical rate for DDoS botnet rental hovers around the $200 for 10,000 bot agents per day. The rate per day is fairly flexible, and influenced by the actual size of the botnet that the bot master is trying to section off for DDoS services

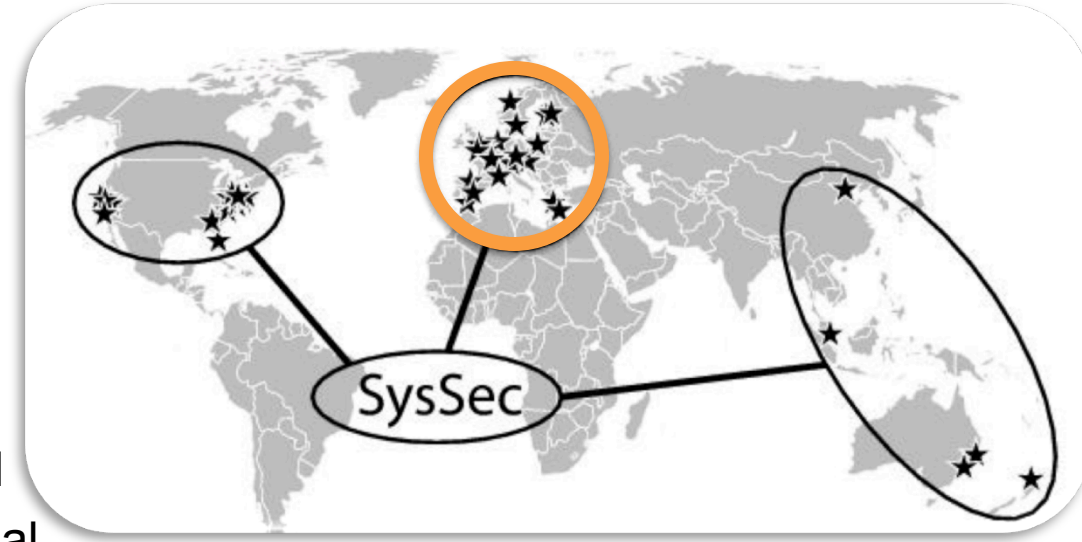
There is even a free 3-minute trial!

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



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(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)

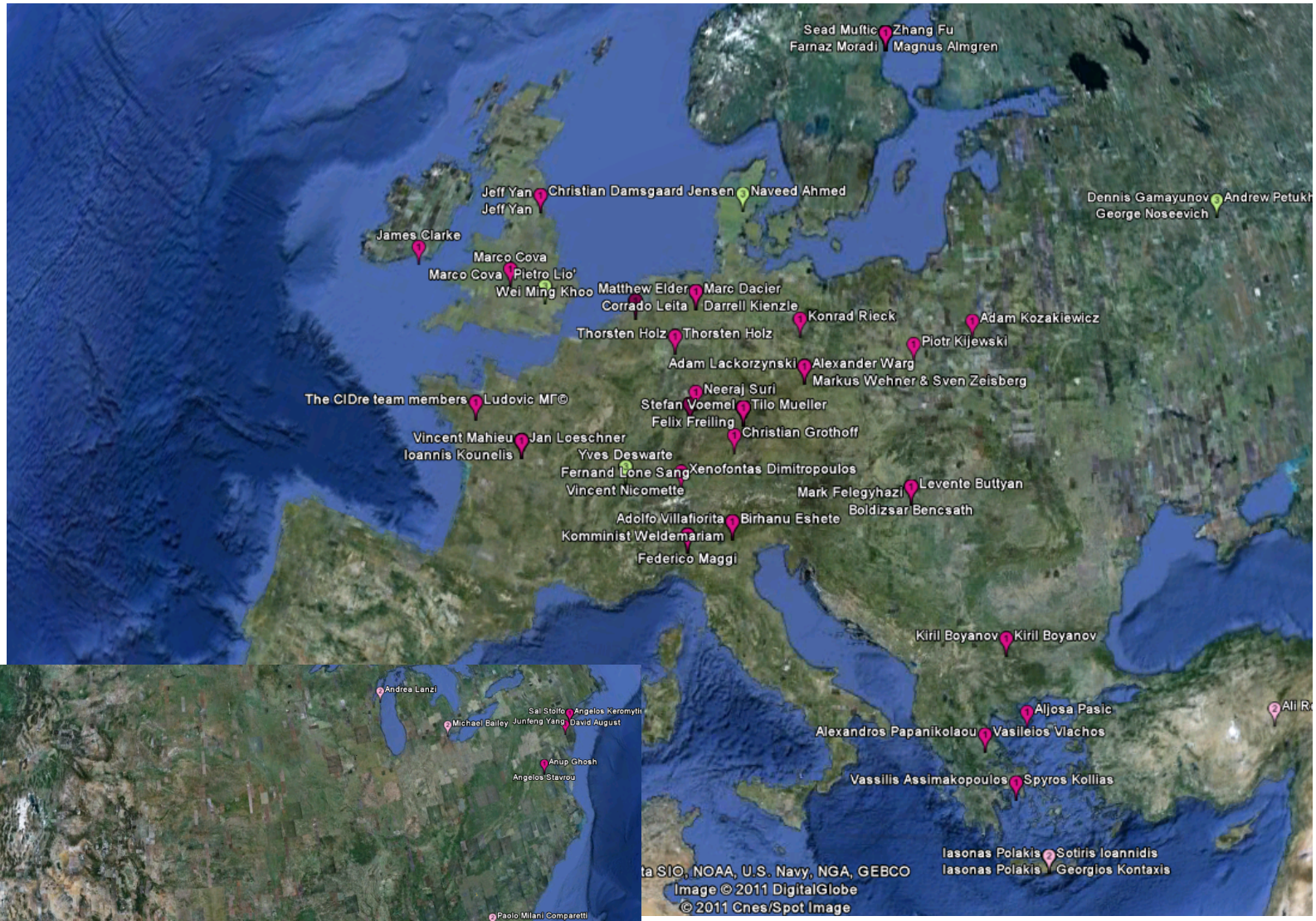
5. Maximize the impact of the project by proactive **dissemination** to the appropriate stakeholders.
   - disseminate its results to international stakeholders so as to form the needed strategic partnerships (with similar projects and organizations overseas) to play a major role in the area.
   - dissemination 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.
   - **1st SysSec Workshop, July 6th 2011, Amsterdam, VU**
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.

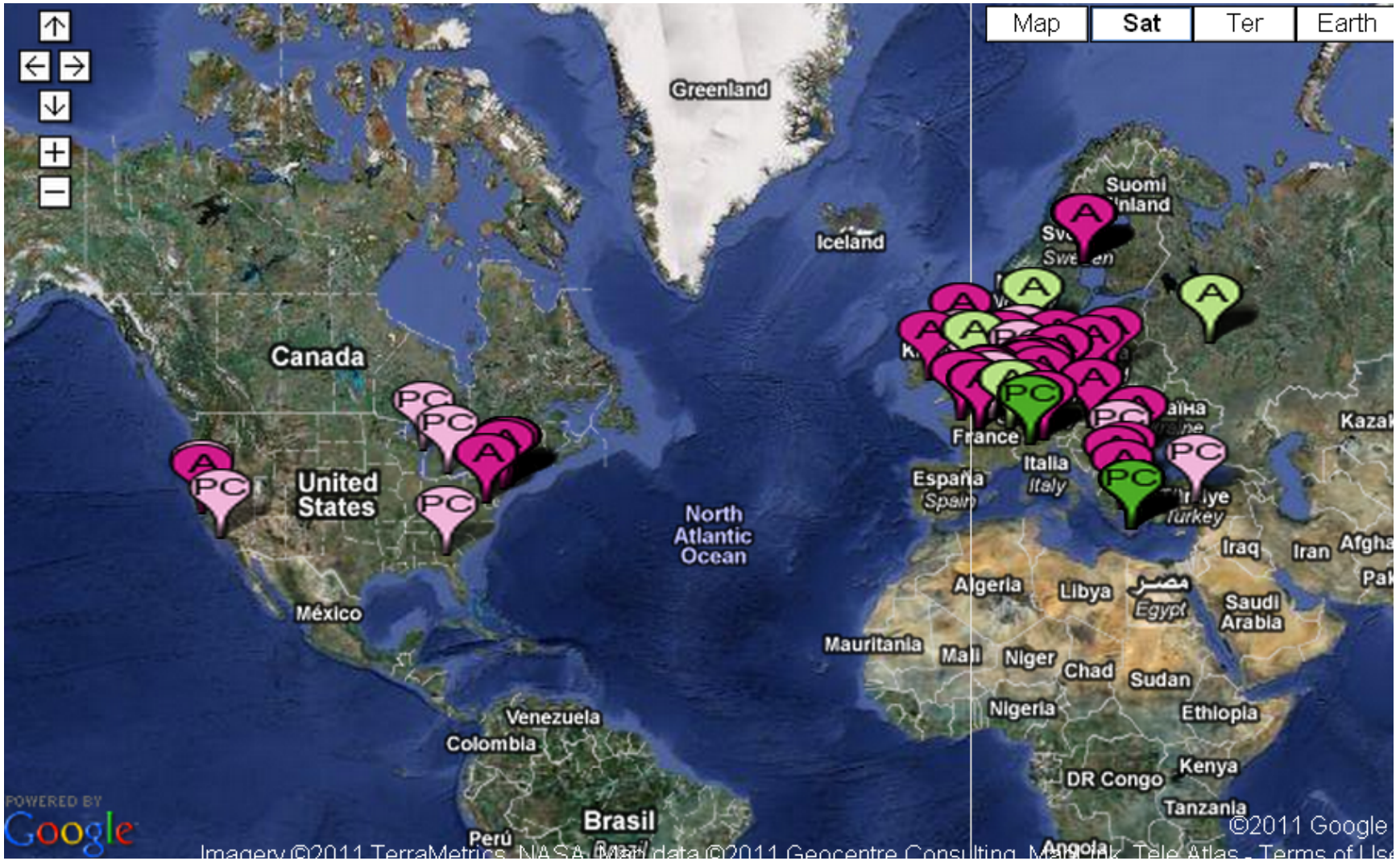
1st SysSec Workshop

- By the numbers:
  - 23 **position** papers
    - i.e. where is the security research going?
  - 6 (longer) Student/Research papers
  - 95 authors
  - 36 organizations
  - One session on INCO strategy
    - In trustworthy ICT
    - Organized by the BIC project

1st SysSec Workshop – Who?

1st SysSec Workshop – International?

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Research Roadmap

How to collaborate with SysSec?

- Join our constituency (mailing list):
  - http://www.syssec-project.eu
- Contribute to the research roadmap
  - Provide **feedback** on emerging threats
  - Share your **ideas** on **future** security issues
- Contribute to our systems security University curriculum
  - Contribute homeworks/exams, lab exercises
  - Teach some of the courses at your University
  - Share some of your course material
- Send your students to the partners
  - with SysSec **Scolarships**
- Send your graduates to the SysSec partners
  - With SysSec **Marie Curie Fellowships**
- 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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