Lessons learned from the worldwide deployment of SGNET in the WOMBAT Project

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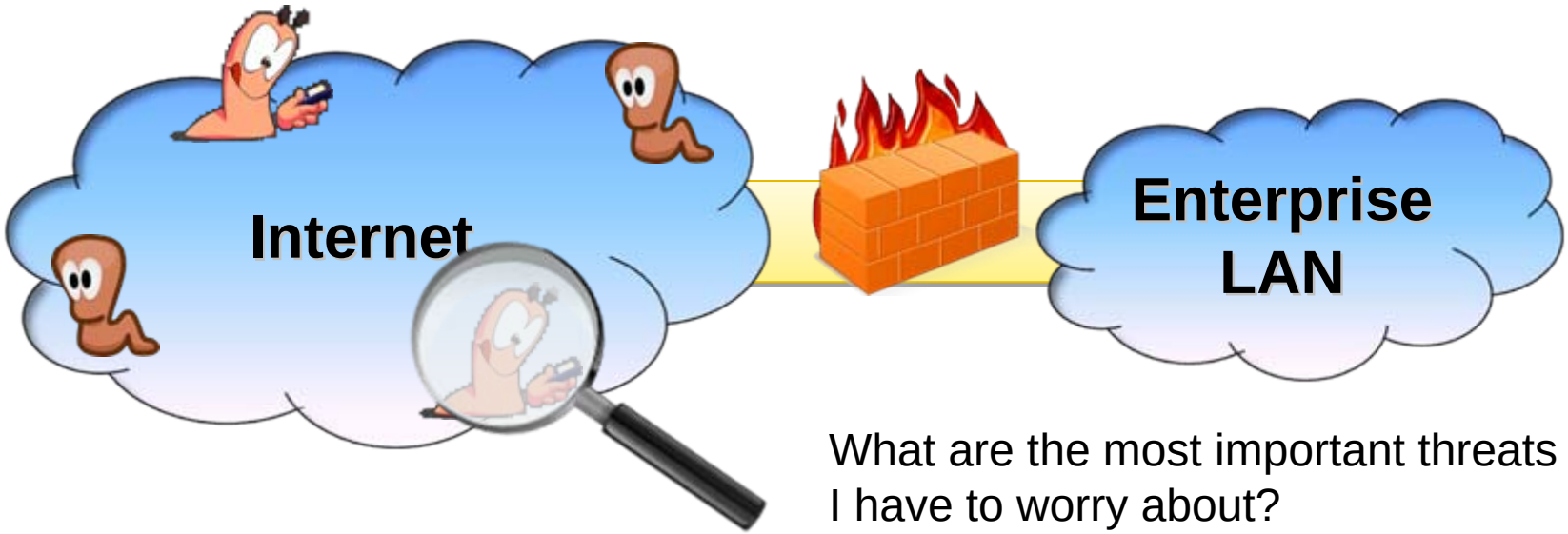
WOMBAT

Data collection to improve our understanding



What are the most important threats I have to worry about?

How well am I protected?

Need to acquire intelligence On Internet Threats

A Worldwide Observatory of Malicious Behaviors and Attack Threats

EURECOM
Sophia Antipolis

Hispasec Sistemas
Seguridad y Tecnologías de la Información

NASK

symantec™

Institute for Infocomm Research
A*STAR

TU VIENNA
Technische Universität Wien
Vienna University of Technology

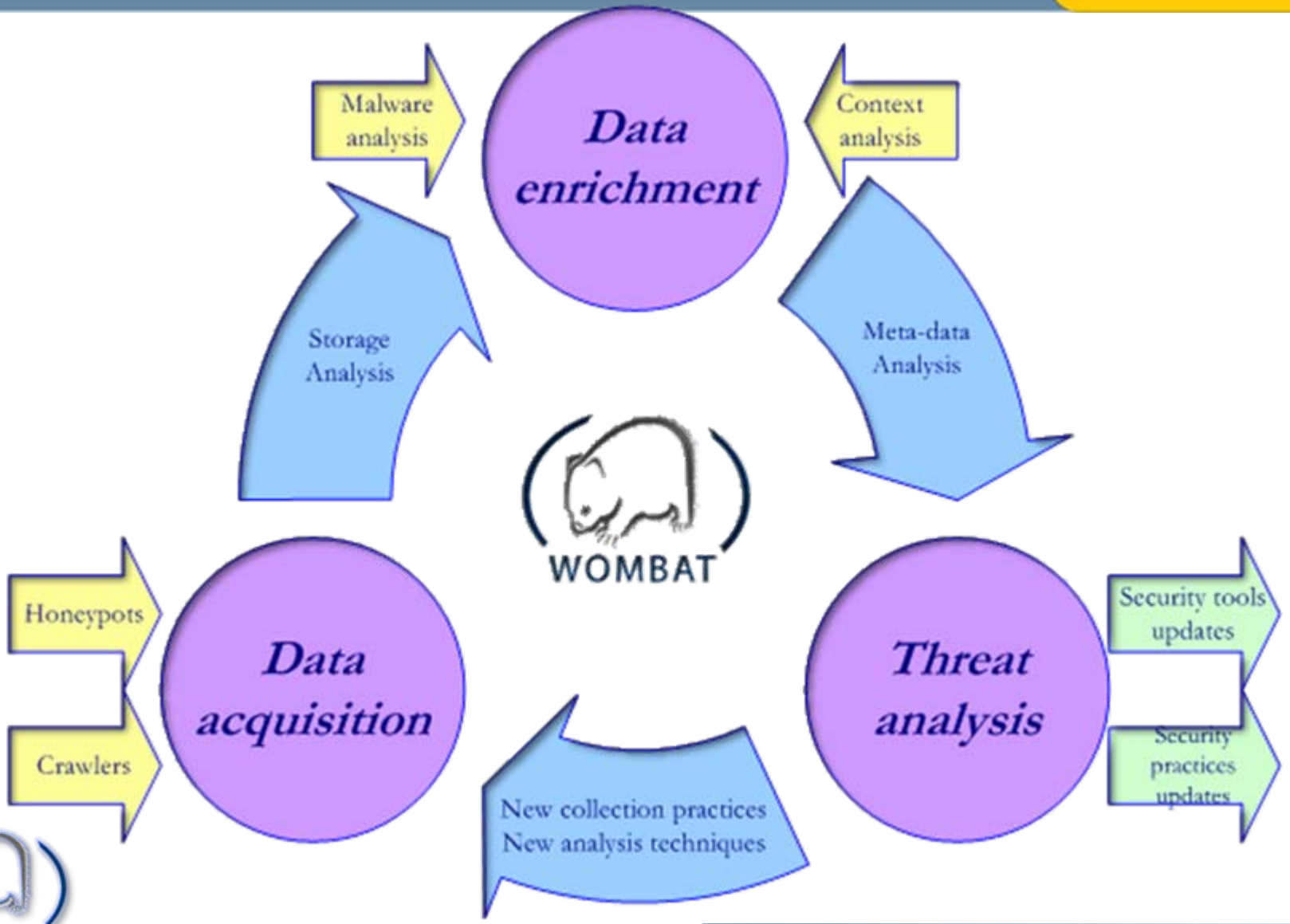
orange™

POLITECNICO MILANO

FORTH
Foundation for Research & Technology - Hellas

vrije Universiteit

WOMBAT


Malware analysis
Data enrichment
Context analysis
Storage Analysis
Meta-data Analysis
WOMBAT
Honeypots
Crawlers
Data acquisition
Threat analysis
Security tools updates
Security practices updates
New collection practices
New analysis techniques

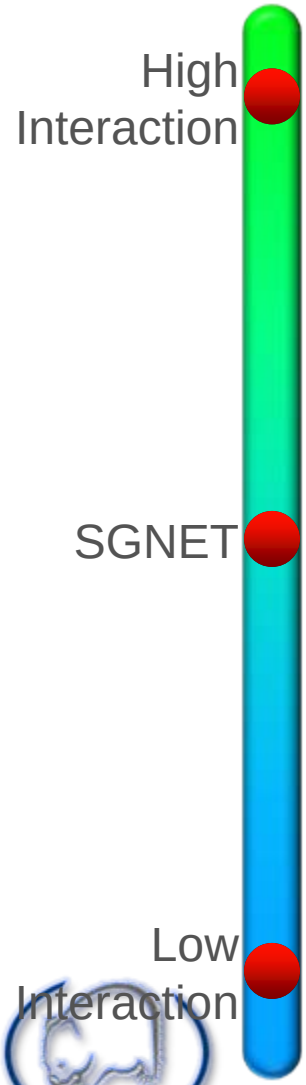
SGNET

- Distributed honeypot deployment for the analysis of server-side code injection attacks
  - Result of the integration of different tools produced by the Wombat participants (EURECOM, TU Vienna, VU Amsterdam, HispasecSystemas)
- Honeypot sensors distributed over the whole Internet
  - Deployed by volunteering partners
  - WIN-WIN partnership: hosting a sensor, the partner receives access to the whole data
  - Non-Disclosure Agreement to protect the identity of the participants and of the attackers

What is SGNET?

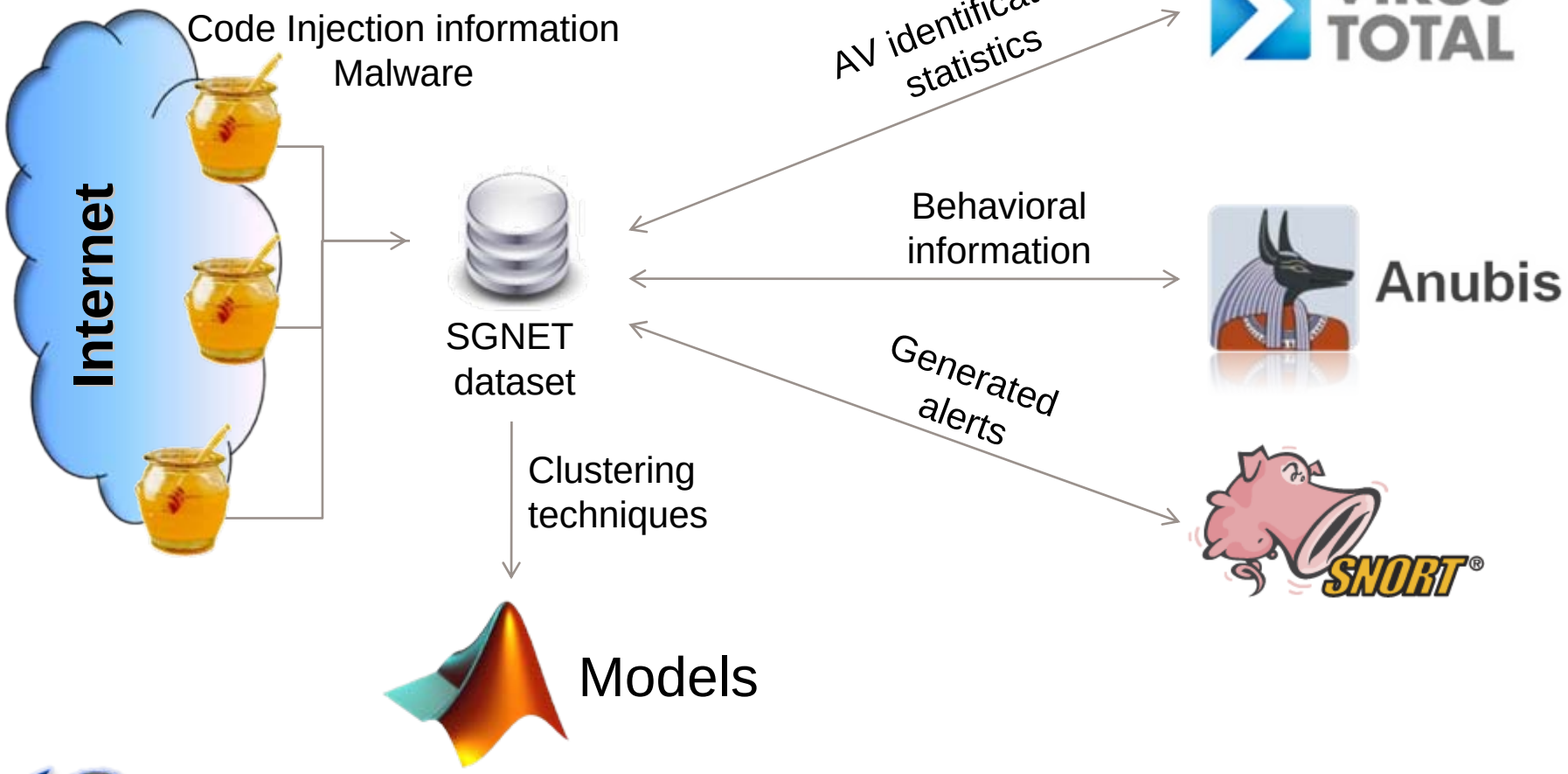
- SGNET is a “meteorological service” for Internet attacks

What makes SGNET different?



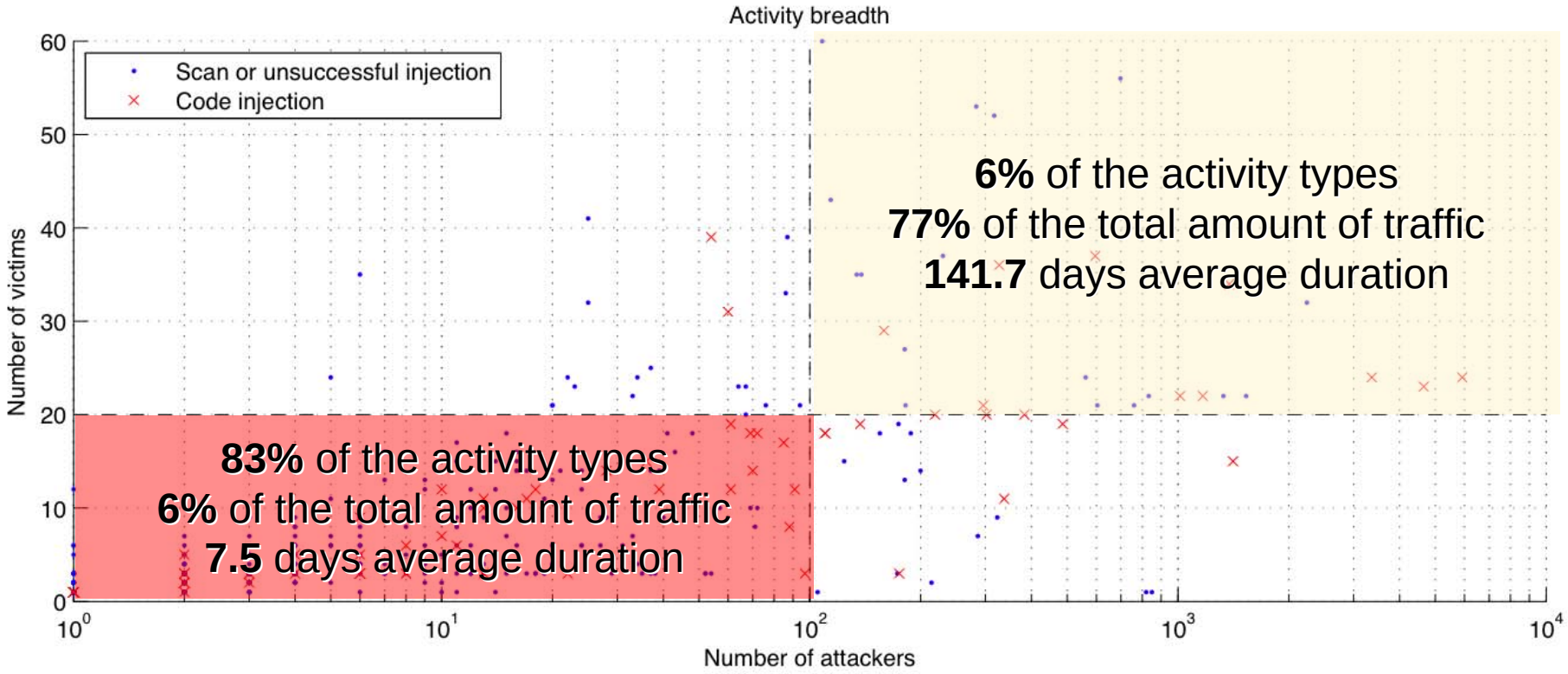
- Need to increase level of interaction
  - Required to retrieve information on the root cause of the observed activities
- Need to minimize the cost of the sensors
  - Implicit requirement of a distributed deployment of sensors hosted by volunteering partners

Data collection and enrichment

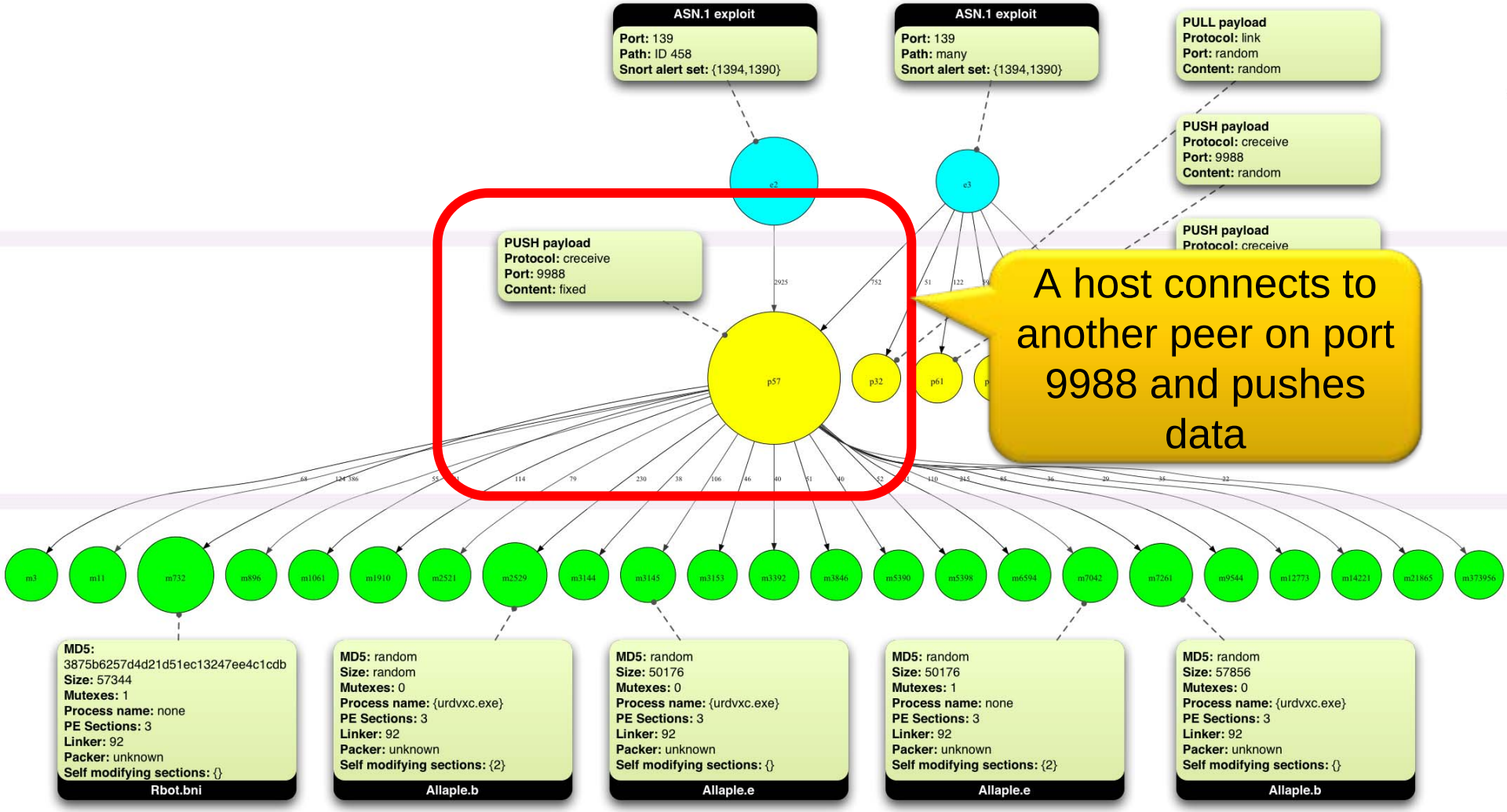


A frightening picture

- Each different activity type is plotted according to the number of involved attackers and victims (its “size”)



Studying the malware ecosystem



Threats and economy

- We need to understand the “underground economy”
- Revenues
  - Phishing/spam campaigns
  - Botnets
  - …
- Costs
  - Sophistication
  - Development of new exploits
  - …?

- Can we “attack” the ROI?

There is more

- The “Future Internet” will be different from nowadays Internet
- We will need to face different patterns and develop new strategies
- How will these changes impact the “underground economy”?
- Some food for thoughts:
  - Highly connected mobile devices: new threats?
  - IPv6: no more NAT?
  - Cloud computing, or better “outsourcing”:
    - New data confidentiality problems
    - Larger scale of what we are starting to see now with social networks

Joining SGNET

- Contact: **corrado_leita@symantec.com**
- What is needed
  - 4 routable IP addresses
  - An old host
    - At least Pentium II, 256 MB RAM, 1GB Hard Disk
  - Non-Disclosure Agreement
    - Protects identity of the participants to the project
- What you get
  - Access to the whole dataset
  - Wiki for sharing interesting results
  - Data mining tools
  - Web interface (demo at http://www.leurrecom.org/event2/index.html)

Thank You!

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