Implementing a network of academic hybrid Cyber Ranges

Paolo PRINETTO

President of CINI

Paolo.Prinetto@polito.it

Mob. +39 335 227529

Giuseppe AIRO' FARULLA

cini Cybersecurity National Lab

cini consorzio interuniversitario nazionale per l'informatica

www.consorzio-cini.it

1

What's a Cyber Range?

What's a Cyber Range?

Virtual ranges dedicated to the training of security professionals, consisting in controlled environments and systems, typically based on virtualisation, that lend themselves to a wide variety of uses:

➢ Individual training and refresher courses on cybersecurity through practical exercises;

➢ Training and assessment of the skills of operators' teams through exercise;

➢ Design, development and testing of new cybersecurity tactics, techniques and procedures;

➢ Evaluation of the defence capabilities of a system.

IWES 2018

Hybrid Cyber Ranges

They properly merge the flexibility offered by *Virtualization* with *Real objects and devices*.

Cyber Ranges

General purpose

Specialized or Vertical

Why do we need them?

Why ~~do we need them?~~

cini
Cybersecurity National Lab

The future of Cybersecurity in Italy:
Strategic focus areas

Projects and Actions to better defend our country from cyber attacks

Laboratorio Nazionale di Cybersecurity
CINI - Consorzio Interuniversitario Nazionale per l'Informatica

Edited by:
Roberto Baldoni, Sapienza Università di Roma
Rocco De Nicola, IMT School for Advanced Studies, Lucca
Paolo Prinetto, Politecnico di Torino

cini
Cybersecurity National Lab

Il Futuro della Cybersecurity in Italia:
Ambiti Progettuali Strategici

Progetti e Azioni per difendere al meglio il Paese dagli attacchi informatici

Laboratorio Nazionale di Cybersecurity
CINI - Consorzio Interuniversitario Nazionale per l'Informatica

A cura di:
Roberto Baldoni, Sapienza Università di Roma
Rocco De Nicola, IMT School for Advanced Studies, Lucca
Paolo Prinetto, Politecnico di Torino

IWES 2018

State-of-the-Art in Italy

➢ Military CR in Chiavari

➢ Very few custom CRs in some Universities

➢ No country-wide facility

Who are we?

Who are we?

Mission

What

➢ Contributing to setting up the Italian national cybersecurity ecosystem

Mission

What

➢ Contributing to setting up the Italian national cybersecurity ecosystem

How

➢ Network of centers

➢ Community building

➢ Talent scouting

➢ Education & Awareness

➢ CyberRange.IT

➢ Strategic Projects

Mission

What

➢ Contributing to setting up the Italian national cybersecurity ecosystem

How

➢ Network of centers

➢ Community building

➢ Talent scouting

➢ Education & Awareness

➢ CyberRange.IT

➢ Strategic Projects

IWES 2018

CyberRange.IT

What

➢ Network of specialized academic CyberRanges

CyberRange.IT

What

- Network of specialized academic CyberRanges

How

- Applying for funds (European, National, Regional, Local, …) to build and integrate them

- Linked to the Chiavari's CyberRange

IWES 2018

CyberRange.IT

Where

➢ Torino: PoliTo & Links - IoT, Intelligent Systems, Industrial Control Systems

➢ UniGE: Smart Grids, Mobile applications

➢ Tuscany: Public Administration, IoT

➢ Roma Sapienza: E-health, Drones

➢ PoliMI: IoT, CPSs, …

➢ Roma Link Campus: Defence

➢ Napoli Federico II: Cloud

➢ …

cini
consorzio
interuniversitario
nazionale
per l'informatica

PoliTo & Links

What

➢ IoT:
  - ➢ SmartME
  - ➢ Water Supply Systems

➢ Intelligent Systems

➢ Industrial Control Systems

How

➢ For each case study:
  - ➢ Two versions:
    - ➢ Normal one
    - ➢ Secure one, protected by SEcube solutions
  - ➢ Web access
  - ➢ Red & Blue Team
  - ➢ ...

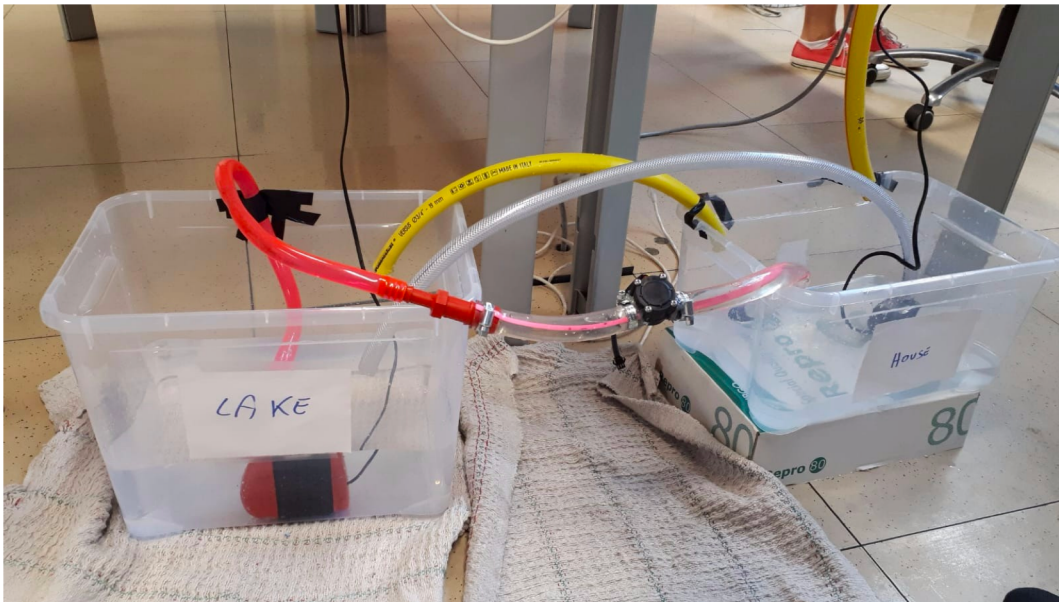IWES 2018

PoliTo & Links

What

- IoT:
  - SmartME
  - Water Supply Systems
- Intelligent Systems
- Industrial Control Systems

How

- EVA: Emulatore di un Vero Acquedotto
- Real:
  - SCADA
  - communication protocols
  - Sensor & Actuator interfaces
- Toy pumps and reservoirs

PoliTo & Links

How

- EVA: *Emulatore di un Vero Acquedotto*
- Real:
  - SCADA
  - communication protocols
  - Sensor & actuator interfaces
- Toy pumps and reservoir

IWES 2018

PoliTo & Links

What

- IoT:
  - SmartME
  - Water Supply Systems
- Intelligent Systems
- Industrial Control Systems

How

- **Smart city devices developed by colleagues of University of Messina**
  - Weather stations
  - Smart Cameras
  - ...

IWES 2018

Mission

What

- Contributing to setting up the Italian national cybersecurity ecosystem

How

- Network of centers
- Community building
- Talent scouting
- Education & Awareness
- CyberRange.IT
- Strategic Projects

IWES 2018

Network of centers

➢ *The National R&D Center in Cybersecurity*
(DPCM Gentiloni)

➢ *Regional Centers in Cybersecurity*
(Regionally Funded)

➢ *Competence Centers*
(Funded by the *Industry 4.0 National Plan*)

➢ *Network of Cyber Ranges*
(Various Funding Sources)

IWES 2018

Who are we?

Mission

What	How
➢ **Contributing to setting up the Italian national cybersecurity ecosystem**	➢ Network of centers ➢ **Community building** ➢ Talent scouting ➢ Education & Awareness ➢ CyberRange.IT ➢ Strategic Projects

IWES 2018

ITA**SEC**:

2018

Some data

- 900+ attendees
- 1 Minister attended
- 18 sponsors
- Budget: 200 k€

ITA**SEC**:

2019

Some dates

➢ Calls for

  ➢ Papers

  ➢ Workshops

  ➢ Tutorials

  ➢ Demos

ITA**SEC**19
ITALIAN CONFERENCE ON CYBERSECURITY
Pisa, 12-15 February 2019
Cybersecurity
National Lab
FIND OUT MORE

Mission

What

➤ **Contributing to setting up the Italian national cybersecurity ecosystem**

How

➤ Network of centers

➤ Community building

➤ **Talent scouting**

➤ Education & Awareness

➤ CyberRange.IT

➤ Strategic Projects

IWES 2018

Talent scouting

CYBER CHALLENGE
CyberChallenge.IT

2018

How

- 8 Universities involved

- 1.900+ student registered, from high schools & BS's

- 160 selected

- Final CFT on June 27th

- Award ceremony on June 28th

- CINI's *Strategic Project:*
  - NRE: 90 k€, to be returned in 3 years
  - Annual budget: 210 k€

IWES 2018

Малые Автюхи, Калинковичский район
Республики Беларусь

Paolo PRINETTO

President of CINI

Paolo.Prinetto@polito.it

Mob. +39 335 227529

cini
Cybersecurity
National Lab

cini
consorzio
interuniversitario
nazionale
per l'informatica

www.consorzio-cini.it