

5<sup>th</sup> Control S



## Control System Cyber-Security Workshop

The summary

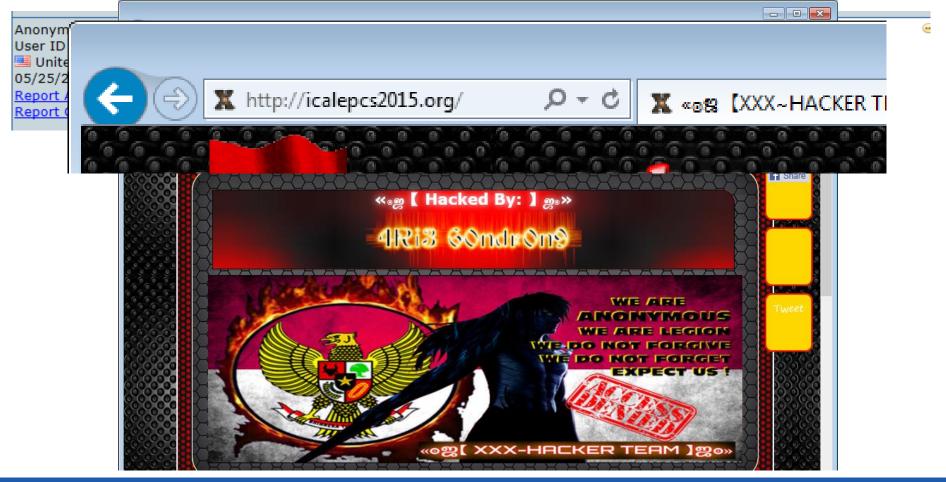
https://www.youtube.com/watch?v=qBwjazPvecU







From the Newsroom...





**Crikey or Blimey** 



~30 participants from four continents

Six in-depth presentations & an awesomely lively discussion session

Centralized configuration of Role-Based authentication in JCOP Framework  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  Offee Break  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  DAQ control system for multi-beamline simultaneous experiments at SACLA  Takashi SUGIMOTO  11:00  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  Cyber Security Assessment of the Spallation Neutron Source at Oak Ridge National Laboratory  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  Testing device robustness with fuzzing  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Timo HAKULI  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  Lunch Break  13:00  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  Discussions  Dr. Stefan LUED  Discussions  Dr. Stefan LUED  Coffee Break		Introduction to the 4th Control System Cyber-Security Workshop	Dr. Stefan LUEDERS
10:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Coffee Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  DAQ control system for multi-beamline simultaneous experiments at SACLA  Takashi SUGIMOTO  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  10:45 - 1  Cyber Security Assessment of the Spallation Neutron Source at Oak Ridge National Laboratory  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Testing device robustness with fuzzing  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Timo HAKULI  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:15 - 1  Lunch Break  13:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break	10:00	Room 108, Melbourne Convention and Exhibition Centre (MCEC)	09:30 - 09:45
Coffee Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  DAQ control system for multi-beamline simultaneous experiments at SACLA  Takashi SUGIMOTO  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  10:45 - 1  Cyber Security Assessment of the Spallation Neutron Source at Oak Ridge National Laboratory  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Testing device robustness with fuzzing  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:45 - 1  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  16:15 - 1  17:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  16:16 - 1  17:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  17:16 - 1  18:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  18:16 - 1  18:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  18:16 - 1  18:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  18:16 - 1  18:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)		Centralized configuration of Role-Based authentication in JCOP Framework	Lorenzo MASETTI
Room 108. Melbourne Convention and Exhibition Centre (MCEC)  DAQ control system for multi-beamline simultaneous experiments at SACLA  Takashi SUGIMOTO  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  10.45 - 1  Cyber Security Assessment of the Spallation Neutron Source at Oak Ridge National Laboratory  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  Testing device robustness with fuzzing  Brice C  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Timo HAKULI  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  12:15 - 1  Lunch Break  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  14:45 - 1  Discussions  Dr. Stefan LUED  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  16:15 - 1  17:10 - 1  Room 108. Melbourne Convention and Exhibition Centre (MCEC)  16:16 - 1  17:17 - 1  18:18 - 1  18:19 - 1  18:10 -		Room 108, Melbourne Convention and Exhibition Centre (MCEC)	09:45 - 10:15
11:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC) 10:45 - 1 Cyber Security Assessment of the Spallation Neutron Source at Oak Ridge National Laboratory Room 108, Melbourne Convention and Exhibition Centre (MCEC) 11:15 - 1 Testing device robustness with fuzzing Room 108, Melbourne Convention and Exhibition Centre (MCEC) 12:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC) 13:45 - 1 Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems Room 108, Melbourne Convention and Exhibition Centre (MCEC) 12:15 - 1 Lunch Break 13:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC) 14:45 - 1 Discussions Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC) 14:15 - 1 Coffee Break		Coffee Break	
11:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Cyber Security Assessment of the Spallation Neutron Source at Oak Ridge National Laboratory  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Testing device robustness with fuzzing  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Timo HAKULI  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:15 - 1  Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:45 - 1  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  16:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  16:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  16:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  16:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  16:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  17:45 - 1  18:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  18:45 - 1  18:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  18:45 - 1  18:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  18:45 - 1  18:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  18:45 - 1		Room 108, Melbourne Convention and Exhibition Centre (MCEC)	10:15 - 10:45
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Cyber Security Assessment of the Spallation Neutron Source at Oak Ridge National Laboratory  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Testing device robustness with fuzzing  Brice C  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  11:45 - 1  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:15 - 1  Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  16:15 - 1  17:15 - 1  18:15 -		DAQ control system for multi-beamline simultaneous experiments at SACLA	Takashi SUGIMOTO
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Testing device robustness with fuzzing  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Timo HAKULI  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:15 - 1  Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Discussions  Dr. Stefan LUED  Totlee Break	11:00	Room 108, Melbourne Convention and Exhibition Centre (MCEC)	10:45 - 11:15
Testing device robustness with fuzzing  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Timo HAKULI Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:45 - 1  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break		Cyber Security Assessment of the Spallation Neutron Source at Oak Ridge National Laboratory	Kareh WHITE
12:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC) Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems Timo HAKULI Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:15 - 1  Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break		Room 108, Melbourne Convention and Exhibition Centre (MCEC)	11:15 - 11:45
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems  Timo HAKULI Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:15 - 1  Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  13:45 - 1  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break		Testing device robustness with fuzzing	Brice COPY
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  12:15 - 1  Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Discussions  Dr. Stefan LUED  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break	12:00	Room 108, Melbourne Convention and Exhibition Centre (MCEC)	11:45 - 12:15
Lunch Break  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  13:45 - 1  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break		Finding Our Skeletons: Information Security Assessment of CERN Access and Safety Systems	Timo HAKULINEN
13:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Stefan LUED  14:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  13:45 - 1  Discussions  Dr. Stefan LUED  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break		Room 108, Melbourne Convention and Exhibition Centre (MCEC)	12:15 - 12:45
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  5 Challenges Securing the LHC  Stefan LUED  14:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Discussions  Dr. Stefan LUED  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break		Lunch Break	
5 Challenges Securing the LHC  14:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  13:45 - 1  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break	13:00		
5 Challenges Securing the LHC  14:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  13:45 - 1  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1  Coffee Break			
14:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  13:45 - 1  Coffee Break		Room 108, Melbourne Convention and Exhibition Centre (MCEC)	12:45 - 13:45
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Discussions  Dr. Stefan LUED  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  15:00  Room 108, Melbourne Convention and Exhibition Centre (MCEC)  14:15 - 1	14:00	5 Challenges Securing the LHC	Stefan LUEDERS
15:00 Room 108, Melbourne Convention and Exhibition Centre (MCEC) 14:15 - 1  Coffee Break		Room 108, Melbourne Convention and Exhibition Centre (MCEC)	13:45 - 14:15
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Coffee Break		Discussions	Dr. Stefan LUEDERS
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Coffee Break			
Room 108, Melbourne Convention and Exhibition Centre (MCEC)  Coffee Break			
	15:00	Room 108, Melbourne Convention and Exhibition Centre (MCEC)	14:15 - 15:15
Dann 100 Malhausha Camundinin and Eukilidian Cantra (MCEC)		Coffee Break	
Routh 100, Welbourne Convention and Exhibition Centre (MCEC) 15:15 - 1		Room 108, Melbourne Convention and Exhibition Centre (MCEC)	15:15 - 15:45



Security as important than ever, but under-resourced and a pain

Silver-bullet: Granular access control & enhanced access protection (2-factor AuthN)

Formalized approaches
(e.g in DoE labs):
NIST 800-82, security
compliance audits, pentesting, protocol fuzzing

Trend to further split dev's from op's

Creating network island with few cross-communication "choke points"

A big thank you to the presenters, the participants and the conference program committee & staff!

