

CISS2020-OL: Inaugural Speech

Aditya Mathur

8:30am Monday July 27, 2020@ iTrust , SUTD

Welcome: Members of Red, Blue, and Green teams, and observers: Greetings from iTrust at the Singapore University of Technology and Design. Welcome to this fully online edition of the Critical Infrastructure Showdown, namely, CISS2020-OL. My name is Aditya Mathur; I am a Professor and Center Director of iTrust at SUTD.

A team of 17, including faculty, research and admin staff, and SUTD students, have worked hard over the past several months to bring you this event. New software and associated infrastructure had to be developed to make this online-event possible.

Purpose: The primary purpose of CISS is to assess the effectiveness of mechanisms aimed at protecting critical infrastructure. These mechanisms include anomaly detectors, plant protectors, and PLC code attestors. Given that the entire event is conducted on a fully operational plant, CISS offers a unique opportunity for researchers and vendors to test their defense mechanisms.

Threat model: The threat model used in CISS is “Insider threat.” Hence, all attackers in red teams, and defenders in blue teams, are offered access to the design information of the plant. While attacks could be launched on the plant through network intrusion, the expectation is that each successful attack leads the plant process to diverge from its normal behavior thus requiring timely action to avoid damage and service disruption.

Benchmark: Over the years, iTrust researchers have created a benchmark test suite to test defense mechanisms for critical infrastructure. This “living” test suite is updated based on inputs from iTrust researchers and partners. Upon completion of CISS2020, the test suite, and an associated toolset, will be made available to academic institutions under a special license.

Sponsors: I would like to take this opportunity to thank our sponsors, National Research Foundation and MINDEF, Singapore for making CISS possible. Thank you to SUTD President Professor Chong Tow Chong, Associate Provost Yeo Kiat Seng and numerous SUTD staff who supported us directly or indirectly to make this event possible.

It is now my distinct pleasure to welcome COL Edward Chen, Commander Cyber Defence Group, at Singapore Armed Forces of MINDEF, to say a few words.