

# City Block

## Cyber-Physical Testing for OT and IT Networks



City Block employs toy construction for low-cost modeling of real-world cities and infrastructure.

Operational technology (OT) systems were once mostly stand-alone and offered a reasonable level of security, since adversaries would need physical access to the system to cause damage. Now that OT systems are rapidly connecting to information technology (IT) networks, their vulnerability is increasing exponentially. In some cases, entire cities and military bases are at risk of crippling cyber attacks.

CACI's City Block provides cyber warriors and security testers an OT cyber-physical modeling and simulation environment where they can test, train, perform research, and rehearse for missions. City Block technology merges industrial control systems and supervisory control and data acquisition (ICS/SCADA) networks with IT networks to provide a more thorough testing and training solution. Physical models give the user a more robust – and more memorable – testing and training experience.

For more information, please contact:

**Christopher "Pup" Lyon**  
Director of Business Development  
CACI Cyberspace Solutions  
(702) 819-7044  
christopher.lyon@caci.com

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## Cost-Effective Testing of OT/IT Networks

Significant differences exist between IT networks and OT networks, necessitating different approaches to training cyber warriors in IT and OT cyber defense and network operations. City Block presents security testers and trainees with a cyber-physical interface to increase their understanding of these systems and their interconnectivity.

Using open-source software and a modular toy model, City Block provides a cost-effective physical representation of an ICS/SCADA environment that can be connected to IT networks for testing and rehearsing. City Block is easily transported, modularized, and rebuilt. It allows the user to model specific hardware, software, and the physical environment, making it particularly useful for mission training and rehearsal. Cyber operators develop a deeper understanding of OT infrastructures and their vulnerabilities, as well as the interdependence between cyber and physical systems.

### Benefits

- Easily transported, modularized and rebuilt
- Enables on-demand training, as well as modeling for joint or service-level DoD exercises
- Holds the attention of trainees, security researchers, and senior officials alike with vivid physical representations of the desired ICS/SCADA environments
- Cost-effective solution for providing ground truth with physical models
- Training curriculum based on user needs

### Use Cases

CACI's City Block is particularly suitable for:

- **Testing:** Test software patches and upgrades in a safe environment; test the efficacy of control system isolation; test control system-specific intrusion detection and prevention systems; test the safety of CPT/MDT network scanning tools
- **Training:** Train system operators how to operate, patch, back up, and restore control systems and how to respond to suspected intrusion; train offensive and defensive cyber operators on OT networks, tools, and equipment
- **Network Modeling and Simulation:** Provide virtualized systems and network environments to conduct cybersecurity vulnerability assessments against critical infrastructure; model OT and ICS/SCADA network environments; model current and future enterprise network environments
- **Supply Chain Risk Management:** Test systems against known vulnerabilities and conduct penetration testing with a standardized process; assess control systems prior to fielding; conduct security activities against foreign-made chips, system components, and code
- **Exercise Support:** Support operational planning and DoD and DHS exercises

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#### Worldwide Headquarters

1100 N. Glebe Road, Arlington, VA 22201  
703-841-7800

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