

LINCOLN LABORATORY *JOURNAL*  
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### Securing embedded systems

A physical unclonable function (PUF) implemented on a printed circuit board provides for the unique identification of and cryptographic key derivation for an embedded system. This PUF technique secures the boot process for the system.

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## CYBER SECURITY

Innovative cyber R&D at  
Lincoln Laboratory

- Reverse engineering to find vulnerabilities
- Discovering cyber threats via social media
- Developing a secure, resilient cloud
- Exploring moving target techniques

## On the Cover

This depiction of Lincoln Laboratory's network traffic during a few minutes of one day was generated by the patented visualization software tool Network Observatory, developed by the Florida Institute for Human and Machine Cognition (IHMC). In this visualization, time is depicted along the vertical axis; packets are represented by dots whose colors indicate the locations from which the data originate and whose density corresponds to file size; and the top and bottom of the display denote the world and the systems within the Laboratory, respectively. Using a variety of software tools designed by both in-house developers and outside commercial and research organizations, analysts protect Lincoln Laboratory networks by carefully monitoring and analyzing *all* traffic coming to and going from the Laboratory and by blocking malicious traffic.