

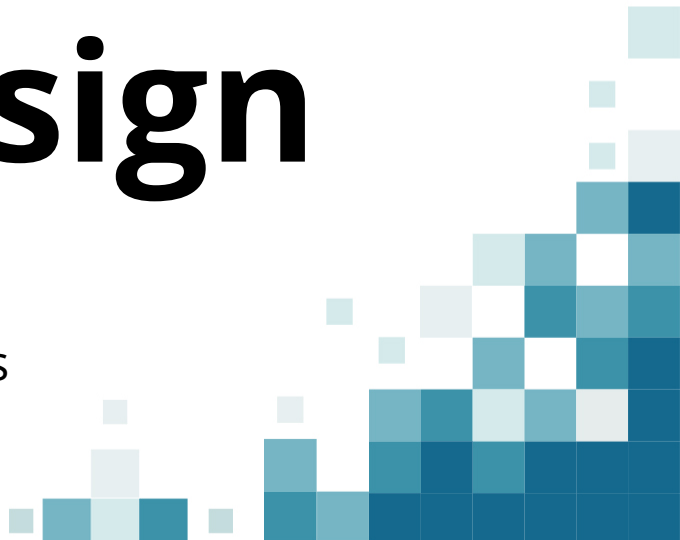


CYBER SECURITY
SUMMIT 2017



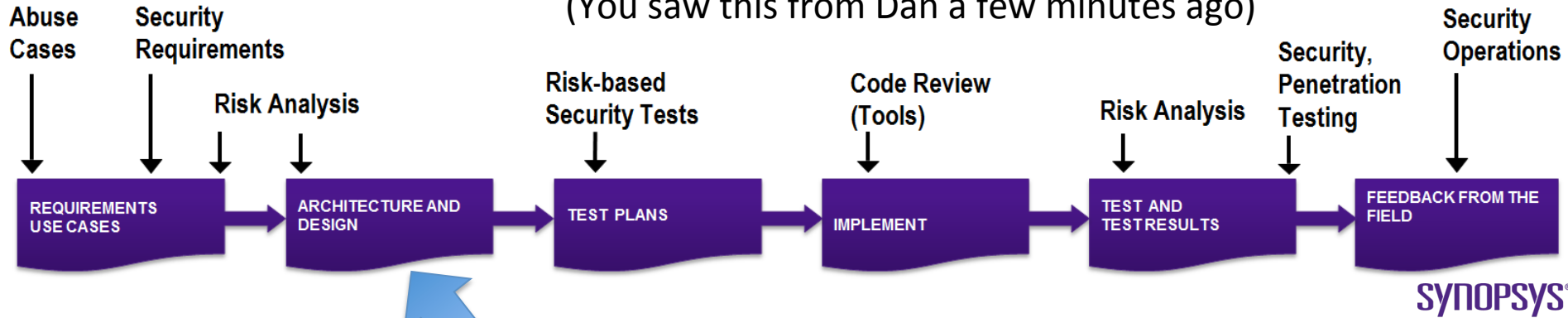
Key Elements in Secure by Design

Todd Carpenter, Chief Engineer, Adventium Labs



Secure by Design Process

(You saw this from Dan a few minutes ago)



**This is where we'll
focus our attention**

Examples Seen in the Field

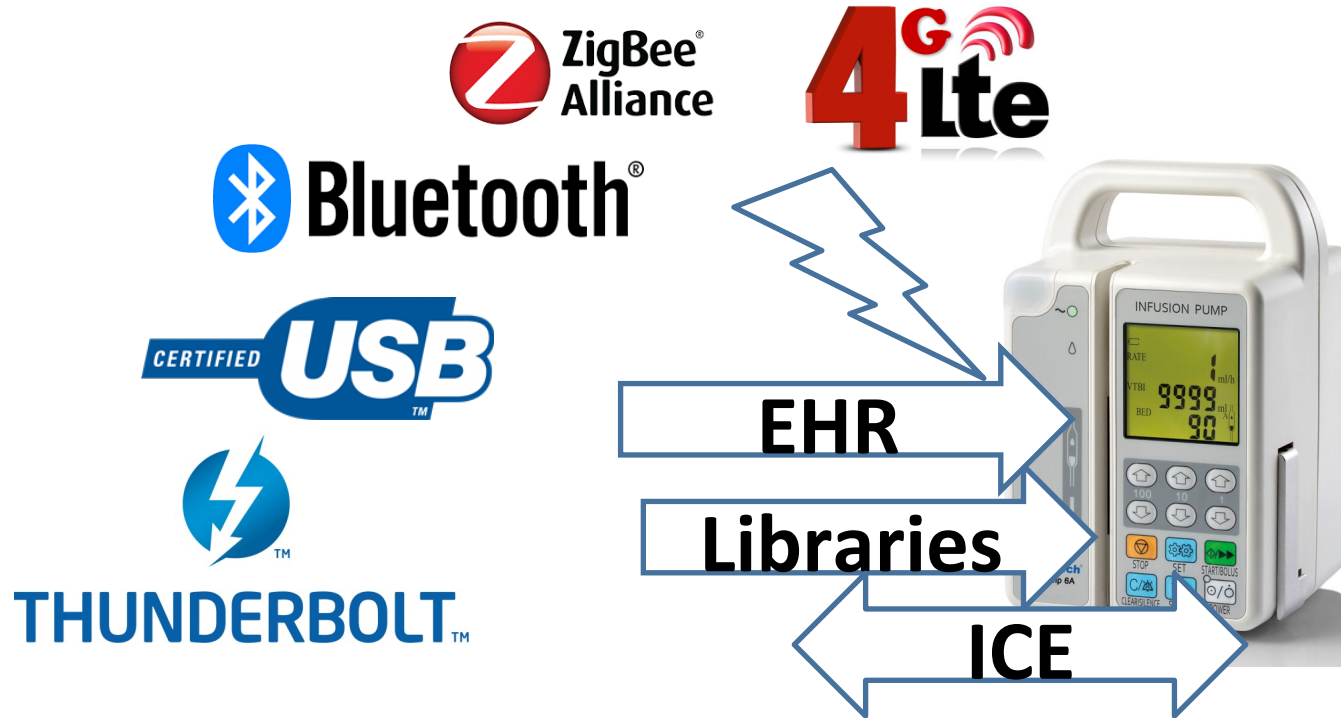
“Spaghetti” Architectures



- Untrustworthy subcomponents
 - Software and Firmware
 - Processor microcode
 - Chipsets
- Untrustworthy data input protocols
- Hardcoded passwords
- Plaintext communications
- Weak input validation
- Unnecessary services

In theory, the process should prevent these things

Example Interfaces in the Field



Marketing often overrides safe and secure decisions

Three Essential Architecture Properties

- Separation
- Determinism
- Non-bypassability

These properties will help you future-proof your designs

DHS-funded Safe & Secure Architecture

