UX Design for Asset Inventory and Vulnerability Management

Where are Industrial Control Systems (ICS)?









Electric Grid

Water Supply

Factory

Power Plant

Industrial Control Systems (ICS) are cyber-physical systems that allow operators to monitor and control complex industrial processes. However, ICS and Critical Infrastructure are often targeted by malicious actors. At least 33% of ICS organizations are at high or critical risk of allowing attackers to gain control of target systems, potentially harm or compromise systems, or cause disruption of services (Kapellmann & Washburn, 2018).



ICS operators face numerous challenges, especially information overload, reliance on disparate information sources, and a lack of aggregated, consumable, and intuitive ways to gain insights on ICS vulnerabilities and risks to protect their assets.

In a recent study conducted by FireEye, ICS operators reported having to rely on a variety of different sources to stay current and **46%** of them were dissatisfied with the data format, availability, and quality of information, citing these as barriers to effectively doing their jobs (Kapellmann & Washburn, 2018).

Our Solution







Ryan is a consultant working at FireEye. He has a new client sending him an asset list. Ryan now spends less time cleaning data with the help of the relational database enabled by the taxonomy. Assets are now mapped to concurrent vulnerabilities. For his new client, Ryan can view all assets, help his client conduct vulnerability assessments, and prioritize risks.

Ryan can also alert all his clients in a timely fashion of a new vulnerability that might affect their operations.

Methods

Research

- Literature Review
- User Interview
- Survey Data Analysis
- Persona

Concept

- Storyboards
- User flow
- Information Architecture

DesignWireframesTaxonomy

Evaluation

• Usability Testing



Kapellmann, D. & Washburn, R. (2018). Call to Action: Mobilizing Community Discussion to Improve Information Sharing Abou Vulnerabilities in Industrial Control and Critical Infrastructure. Submitted.



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