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FEDERATION FOR FIRE PLUS

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CReAT – Cybersecurity Risk Assessment Framework for IoT Platforms

Session: IoT Risk Assessment & Management

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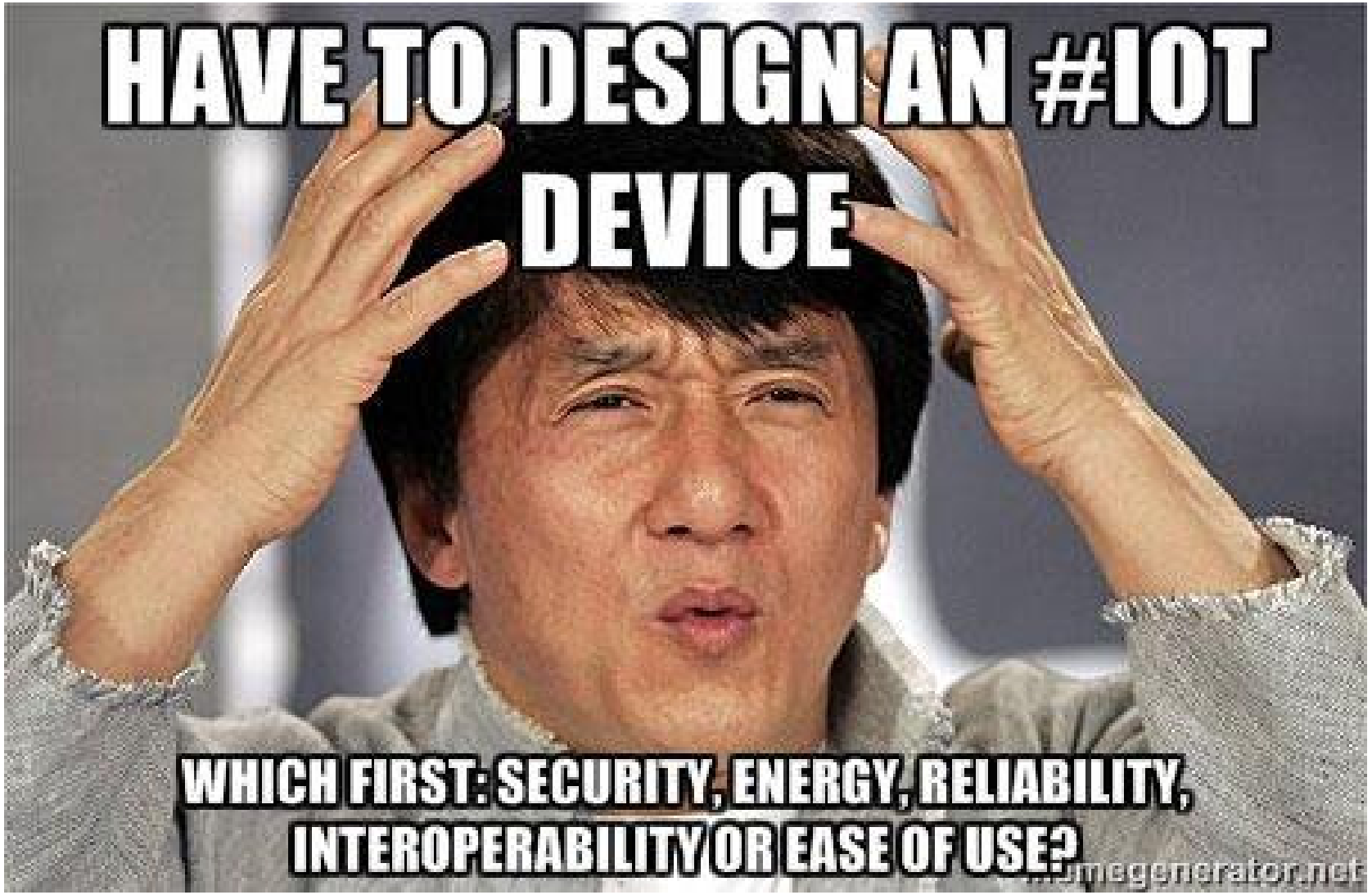
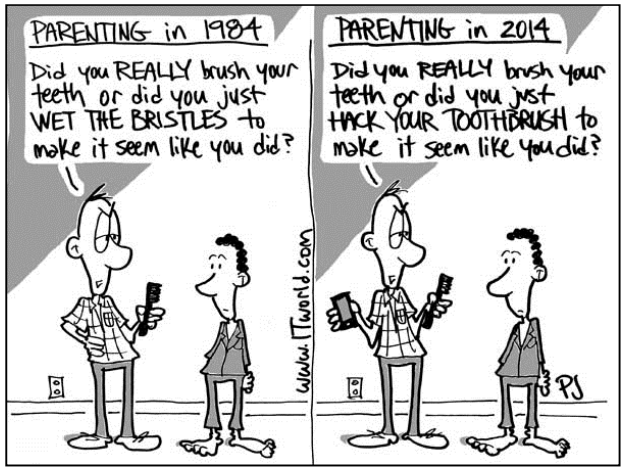

HAVE TO DESIGN AN #IOT DEVICE
WHICH FIRST: SECURITY, ENERGY, RELIABILITY, INTEROPERABILITY OR EASE OF USE?
memegenerator.net

Cyberattack resilience and privacy

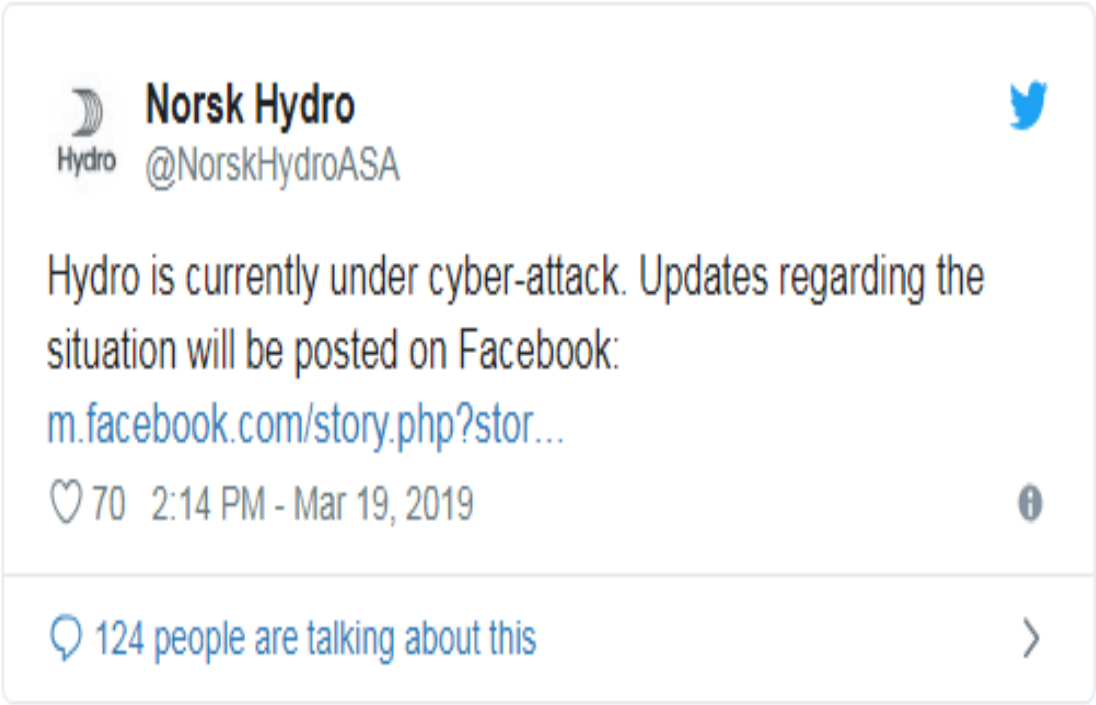
- Cyber-criminals stepping up attacks on IoT systems
- Privacy concerns in disruptive technologies
- No uniform Cyberattack resilience methodology



Source: http://www.itworld.com/

Increased attacks …

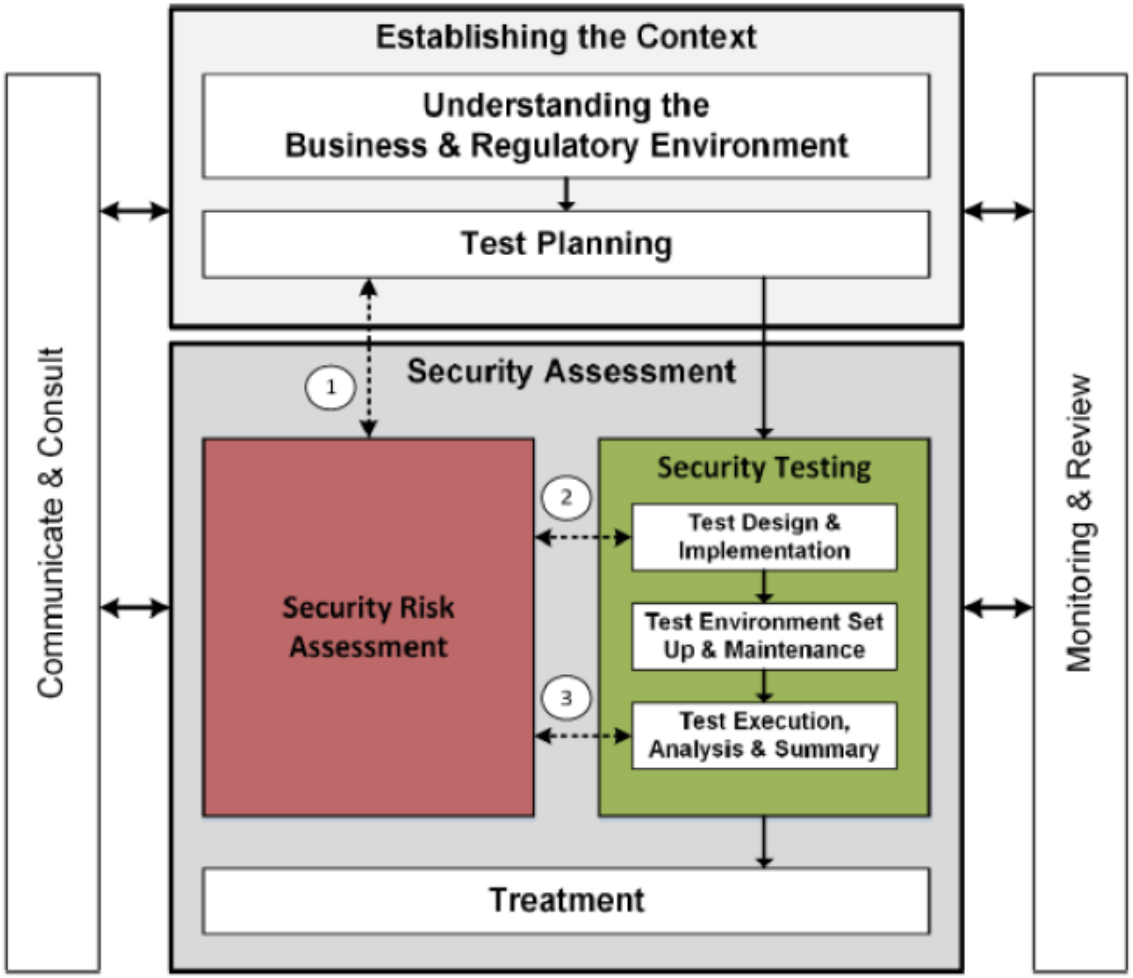
- Multiple DDoS attacks led to inaccessibility of Github, Twitter, and more in October 2016.
  - Attacks carried out by IoT devices including printers, IP cameras, and baby monitors.
- Stuxnet – malicious computer program targeting industrial computer systems around a decade ago.



Growing concerns …

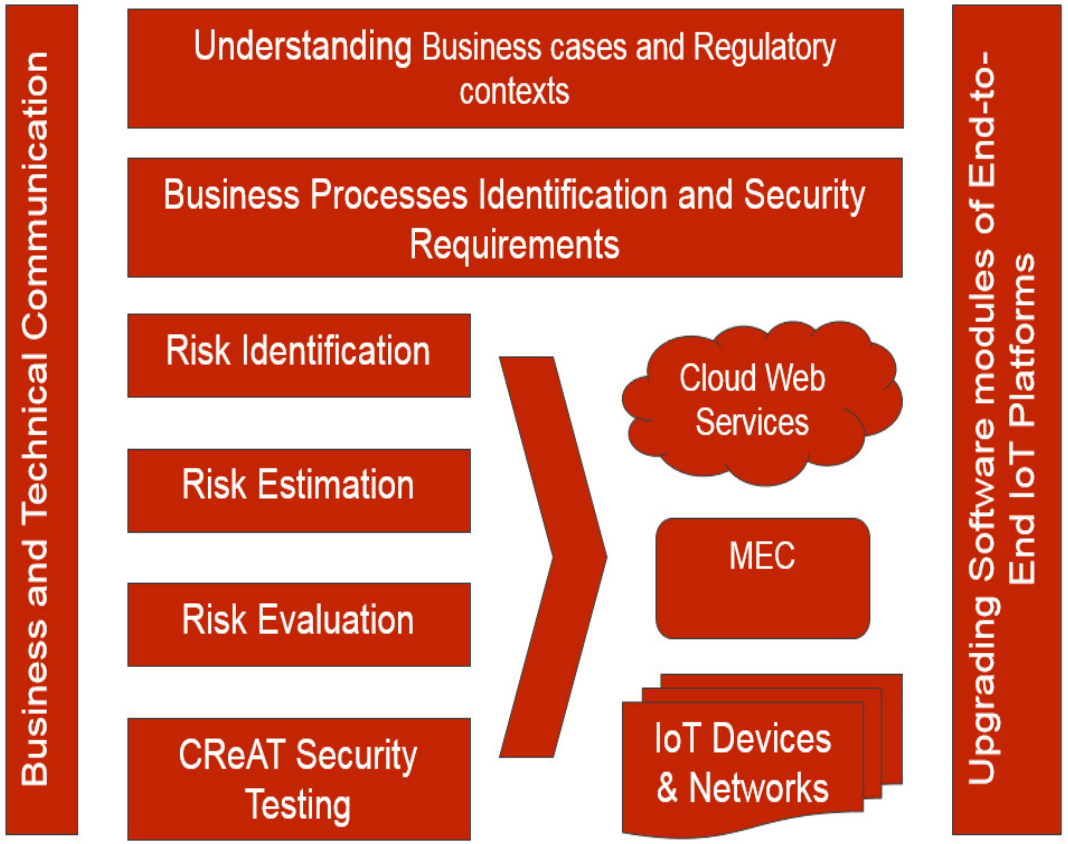
- Critical infrastructure being targeted
- Legacy systems that do not handle latest security protocols
- Lack of standards for Industrial IoT security
- Scalability
- 32% of IIoT devices connect directly to the internet, bypassing traditional IT security layers.
- Almost 40% said identifying, tracking and managing devices represented a significant security challenge.
- Only 40% reported applying and maintaining patches and updates to protect their IIoT devices and systems.
- 56% cited difficulty in patching as one of the greatest security challenges
  - More info - https://www.themanufacturer.com/articles/iiot-security-endpoints-most-vulnerable-aspect/

Cybersecurity Risk Assessment – ETSI Framework

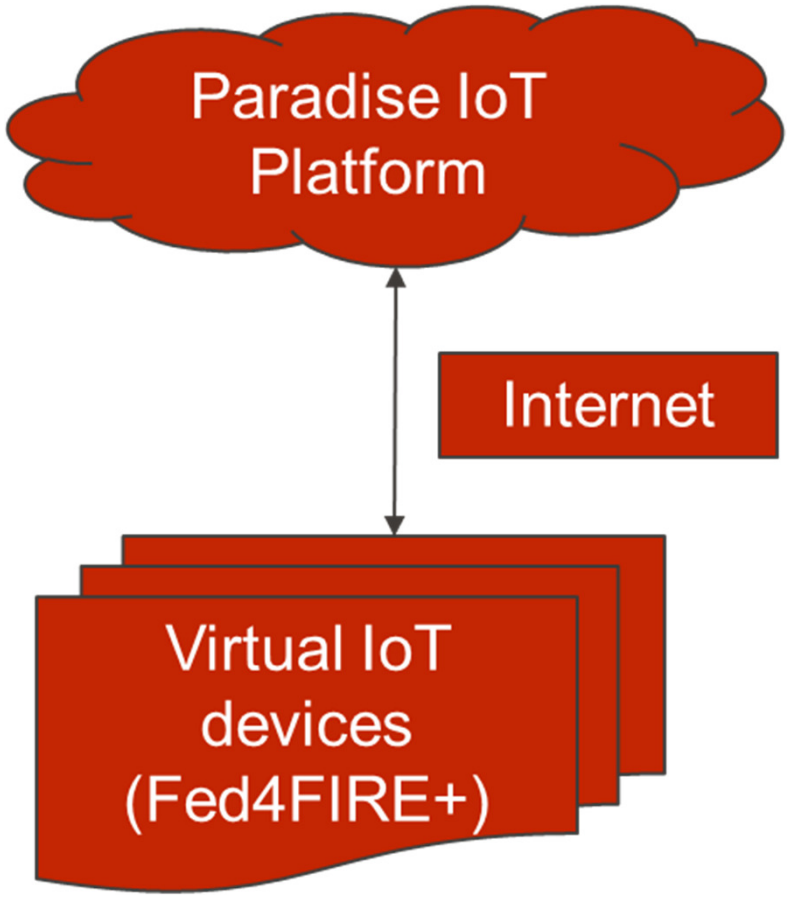


- OWASP Application Security Verification Standard Project
- Microsoft's STRIDE
- Common Vulnerability Scoring System

CReAT Framework for Cybersecurity Risk Assessment



CReAT Framework Testing in Fed4FIRE+



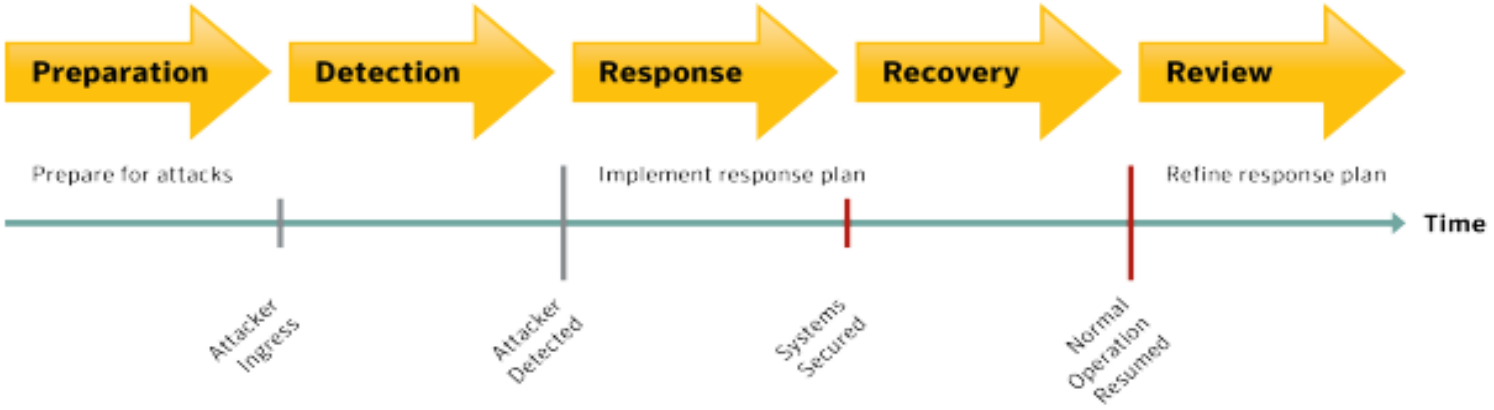
Risk assessment in terms of

- DDoS detection
- Insufficient authentication, authorization
- Insecure Cloud web services

No security breach observed

Cyber Resilience

- Ability to prepare for, respond to and recover from cyber attacks.
  - It helps an organisation protect against cyber risks, defend against and limit the severity of attacks, and ensure its continued survival despite an attack.
- Emerged over the past few years because traditional cyber security measures are no longer enough.
- It is now commonly accepted that it's no longer a matter of 'if' but 'when' an organisation will suffer a cyber attack.



Source: Symantec Whitepaper

Four Step Approach

Manage and Protect

- Malware protection
- Data security
- Identity and access control
- Encryption, network security …

Identify and detect

- Continuous monitoring of network and information systems to detect anomalies and potential cyber security incidents before they can cause any significant damage.

Respond and recover

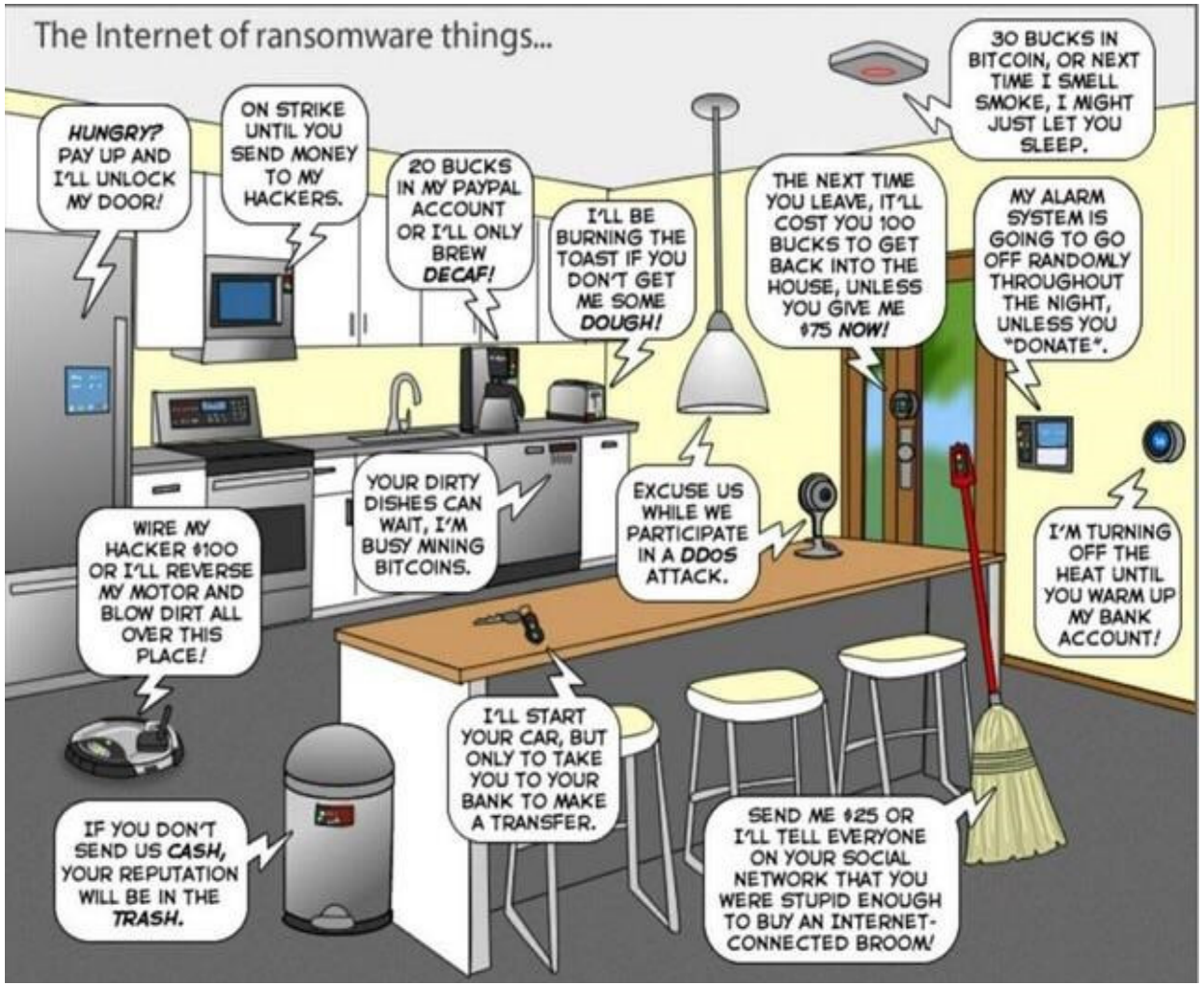
- Incident response management program
- Measures to ensure business continuity
- Restore normalcy as soon as possible

Govern and assure

- Such program and measures are a part of enterprise organization and built into business.

Conclusion

- Risk assessment must be performed at the early phases of product and service definition, development.
- Security, privacy, and trust are key aspects when designing winning UX.



Source - https://www.reddit.com/r/Iota/comments/6axglx/how_does_iota_help_with_the_huge_iot_security/

Acknowledgement

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Thank You!!

감사합니다 Natick

Grazie Danke Ευχαριστίες Dalu Obrigado

Thank You Köszönöm

Tack

Спасибо Dank Gracias

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Digiotouch Core Business

- Sustainable and Secure Digital Transformation
  - Cloud based, secure, End-to-End Paradise IoT Platform