Securing OT through People

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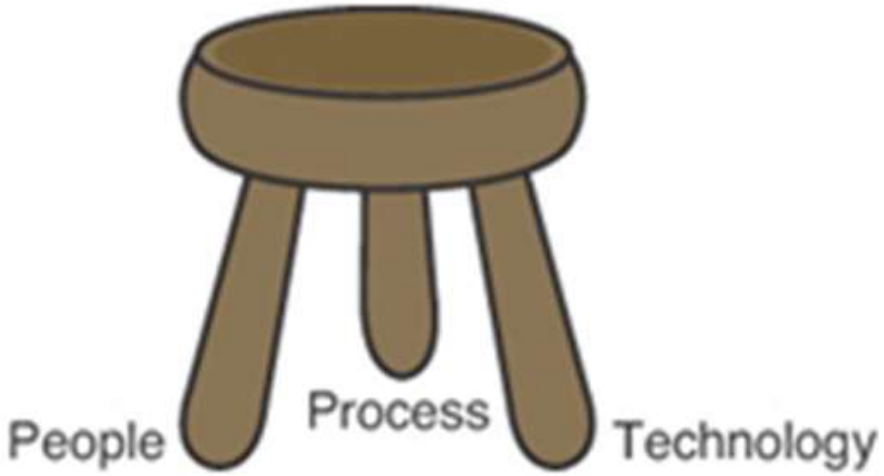
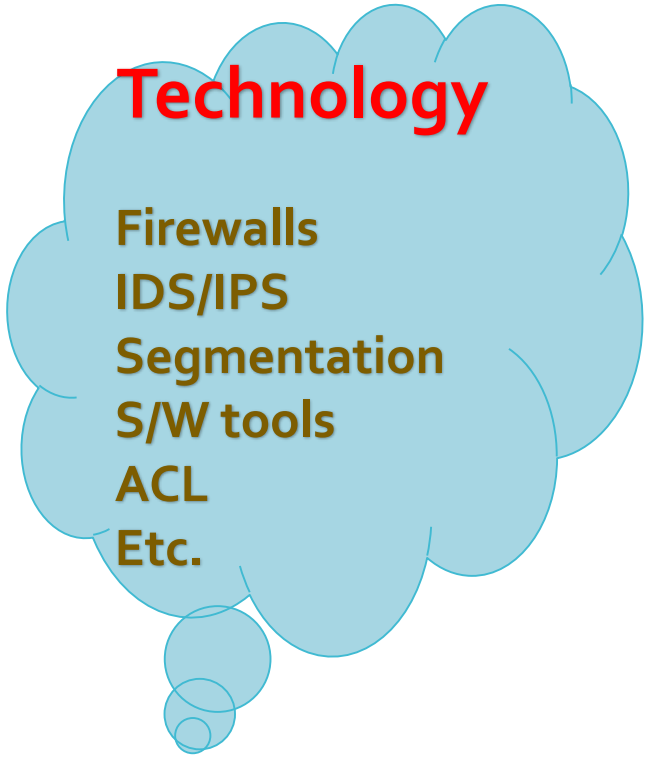
Digital Systems Security Framework

OT Security



The Framework Surface



Scratching under the Surface

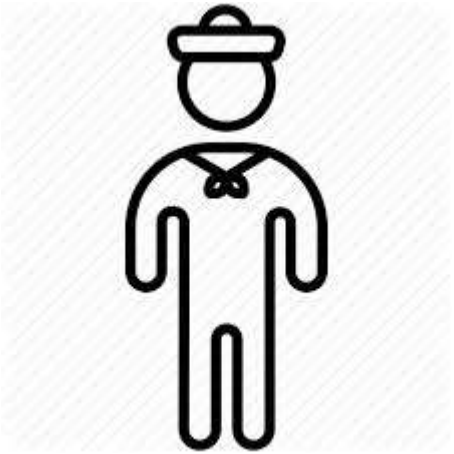
Cyber Incident root cause

Technology	**Properly designed, configured and maintained H/W or S/W, rarely lead to Cyber Incidents.**
Processes	**Well-developed and established processes, rarely lead to Cyber Incidents.**
People	**Negligence, ignorance, lack of knowledge, wrong decision, or just failure doing the basics are the usual reason.**

People

Management

Seafarers



IT Personnel

Employees

Suppliers

Management

Cyber Security is a Top – Down activity. Everything starts from the Management.

Requirements

- ***Senior Management must understand the General Strategy***
- ***Risk based analysis, at the higher level, with Risks & Impact***
- ***Departments' Managers to understand threats, in more details***
- ***Equipment and software installation in cooperation with IT/Security***
- ***Procedures & processes based on Operational & Security needs***

✓ ***It is vital that the Management embrace and support our strategy.***

Employees

The Employees involved in OT systems cluster.

- *Like Departments' Managers, they must understand threats, in more details*
- *Maintain and audit OT systems' use with a Cyber safe mindset.*
- *Develop procedures and processes to be Cyber security compliant.*
- *Have good knowledge of the Vessel Cyber Security Policy and guidelines.*
- *Be Cyber Security aware.*
- ***Become our valuable sponsors***

Seafarers

Probably one of the two MOST critical links of the OT systems defense chain.

- ***Must understand the Serious impact of an incident to the vessel's overall safety***
- ***Have good knowledge of the Vessel Cyber Security Policy and guidelines.***
- ***Their interaction with OT the systems makes them potential threat actors and defenders.***
- ***No matter the countermeasures and protection you have applied, just like on the shore side, a significant percentage of cyber events occur due to users' behavior.***
- ***Make them the Human Firewall O/B***

When People are "missing"

= **Cyber safe**

= **Booby Trap**

Suppliers, makers & other 3rd parties

Probably the second MOST critical link of the OT systems defense chain

- ***Makers***
  - *Re-define their R&D to consider the threat landscape*
  - *Educate/train their personnel and retain awareness*
- ***Service Companies***
  - *Educate/train their personnel and engineers and retain awareness*
  - *Adopt Cyber security mentality*
- ***Authorities & other Bodies***
  - *Accelerate their pace and lead the Cyber Security race*

Digital Technology and threats are moving much faster than they anticipate

IT Personnel

The last but not the least of the "People Universe"

- *Tech savvies but not necessarily Cyber Aware*
- *Usually provide the "last mile" of the OT systems connection to the real world. It is important to understand the impact*
- *Are they truly familiar with the systems and technology they use? When was their last course?*
- *Like Seafarers, they are our Human Firewall. They are our advantage*
- *Educate them, don't just train them.*

Conclusion

Ultimately, the objective should be a Sailor/Person who understands cyber hygiene and proper use of the network as a primary on-the-job tool, just as well as any Soldier knows his or her rifle.

Sailors/Persons go to sea aboard complex ships with integrated networked systems that run everything from Hull, Cargo, Mechanical, and Electrical (HM&E) systems.

The computer is our rifle, why shouldn't we learn how to use it more safely and effectively?

"Center for International Maritime Cybersecurity"

Conclusion