MARLINK

Connect smarter. Anywhere.

Digital Ship

MARITIME CYBER RESILIENCE FORUM

HAMBURG, 10 OCTOBER

The Reality of Implementing Cyber Security in Shipping

Patrick Decool
Director Innovations, Product Management

Dealing with CyberSecurity in Maritime

No Problem!

Business Losses
Staff Safety
Operational Disruption
Company Reputation
Insurance Impacts
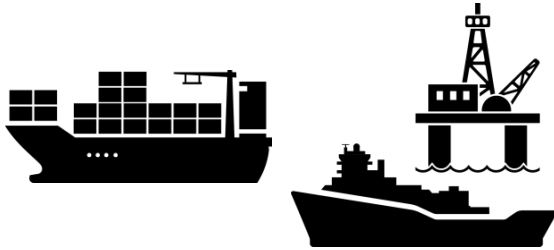Regulation Penalties

Only Problems!

Reduced Staff
Heterogenic Fleet
Limited Budget
No Cyber Specialists
Unmanaged Onboard IT
OT / IT Convergence

Nature of Business = Complex Integration

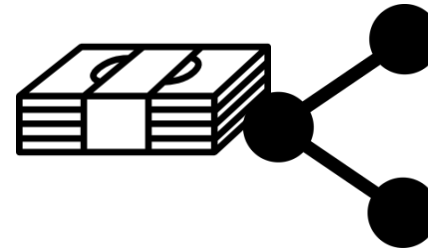**PROTECT** · **DETECT** · **AWARE** · **RESPOND** · *Recurring Process*
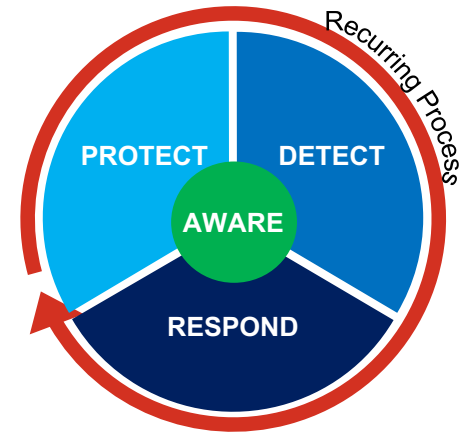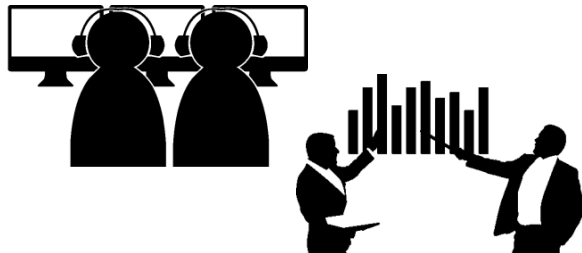
All Levels: CEO → CREW

Environment with Specific Challenges

Fleetwide & Connectivity
Agnostic Solutions

Cost Effectiveness,
Modular Offer & Durability
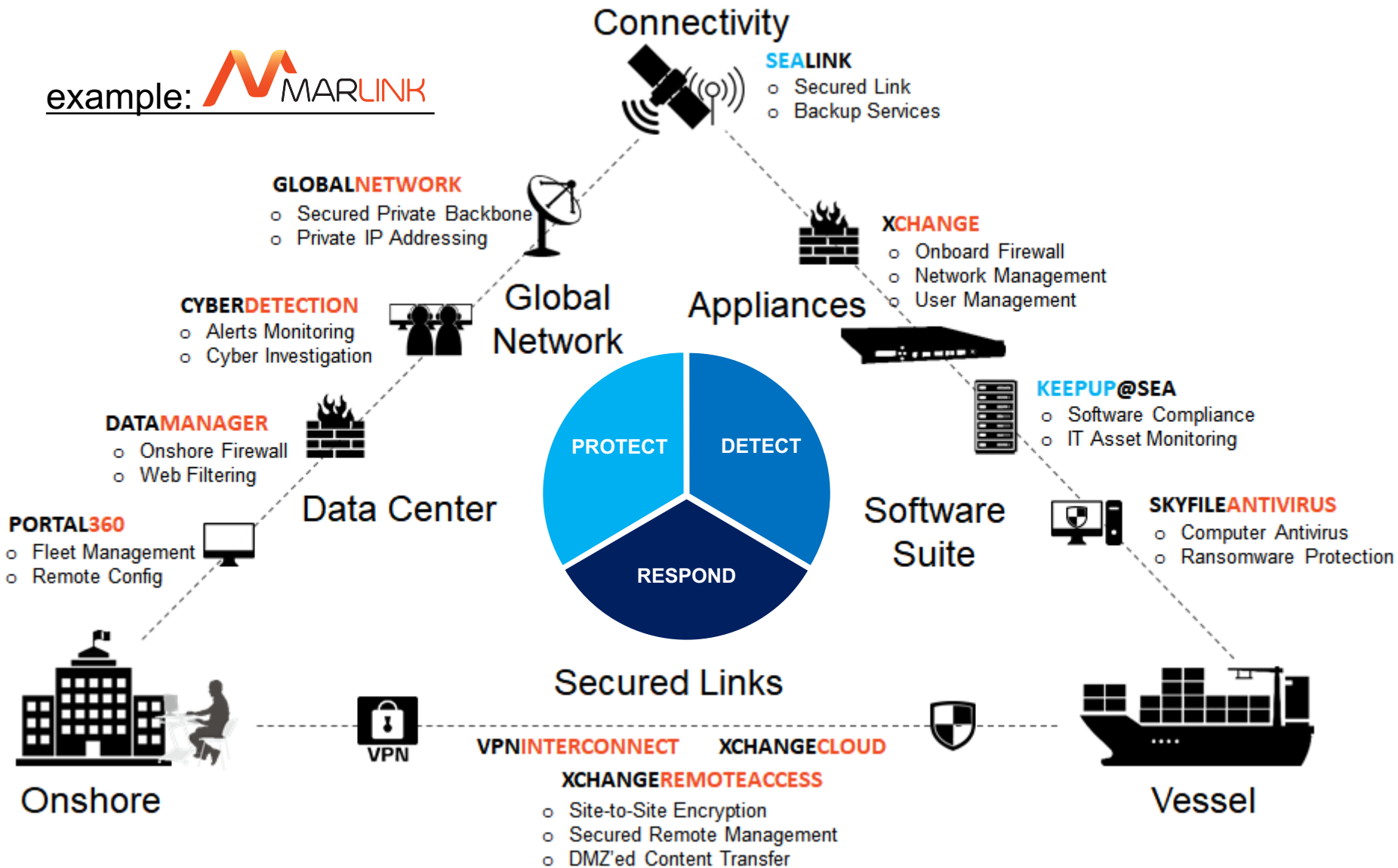
Reactivity & Professional
Remote Incident Support

Evolving Global &
Regional Regulation

Your Provider as a CyberSecurity Partner

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example: **MAR**LINK

Connectivity

SEALINK
- Secured Link
- Backup Services

GLOBAL NETWORK
- Secured Private Backbone
- Private IP Addressing

Global Network

XCHANGE
- Onboard Firewall
- Network Management
- User Management

Appliances

CYBER DETECTION
- Alerts Monitoring
- Cyber Investigation

DATA MANAGER
- Onshore Firewall
- Web Filtering

Data Center

PROTECT DETECT RESPOND

KEEPUP@SEA
- Software Compliance
- IT Asset Monitoring

SKYFILE ANTIVIRUS
- Computer Antivirus
- Ransomware Protection

Software Suite

PORTAL 360
- Fleet Management
- Remote Config

Onshore

Secured Links

VPN

VPN INTERCONNECT   **XCHANGE CLOUD**

XCHANGE REMOTE ACCESS
- Site-to-Site Encryption
- Secured Remote Management
- DMZ'ed Content Transfer

Vessel

Recent Attacks in May / June 2017

WannaCry ransomware attack

The WannaCry ransomware attack was a May 2017 worldwide cyberattack by the WannaCry ransomware cryptoworm, which targeted computers running the Microsoft Windows operating system by encrypting data and ... Wikipedia

Start date: May 2017

Initial release date: 2017

Cause: WannaCry worm

Result: Over 200,000 victims and more than 300,000 computers infected

Theme: Ransomware encrypting files with $300 – $600 demand (via bitcoin)

Petya

Malware

Petya is a family of encrypting ransomware that was first discovered in 2016. The malware targets Microsoft Windows-based systems, infecting the master boot record to execute a payload that encrypts a ... Wikipedia

Classification: Trojan horse

Operating system(s) affected: Windows

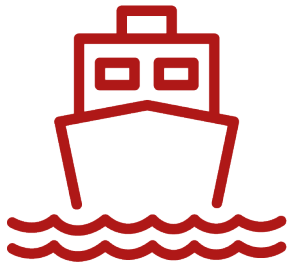Aliases: GoldenEye; NotPetya

WannaCry „700 Vessels Patched in 4 Days"

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KeepUP@SEA

700 Vessel servers
5600 PC clients

Surfacing
Information of spread and severity **May 12** **(>Friday)**
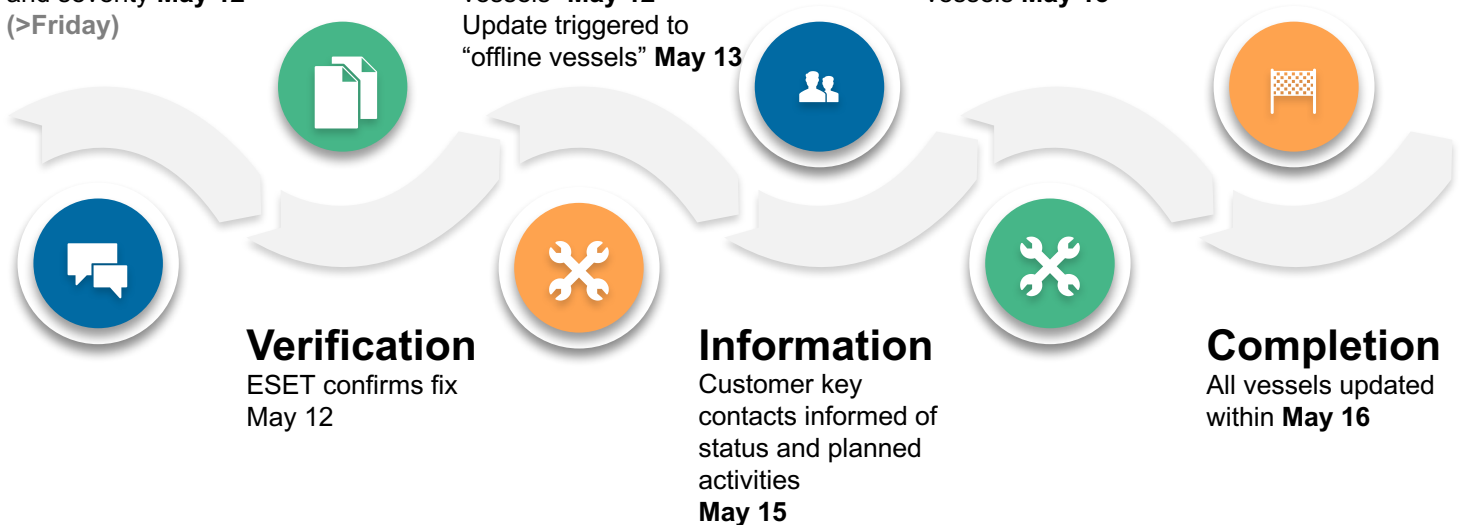
ESET update
Update sent to "online vessels" **May 12**
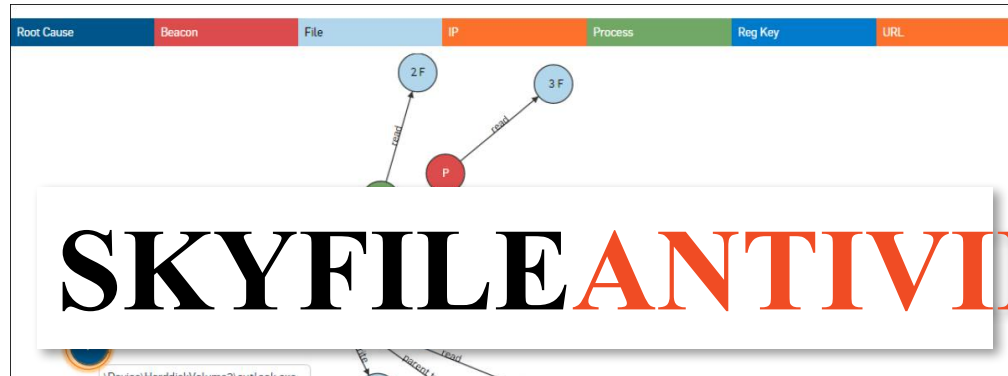Update triggered to "offline vessels" **May 13**

Microsoft patch
Distributed to all vessels **May 15**

Verification
ESET confirms fix May 12

Information
Customer key contacts informed of status and planned activities **May 15**

Completion
All vessels updated within **May 16**

Petya „2000 Vessels protected within Hours"

SKYFILEANTIVIRUS

| Root Cause | Beacon | File | IP | Process | Reg Key | URL |

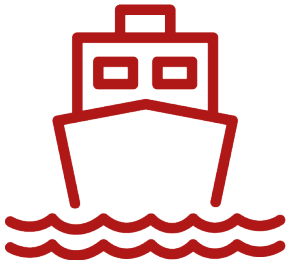**List of patches published by cyber security provider:**

Troj/Ransom-EOB	rans-eob.ide	2017-06-27 14:10:00 UTC	2017-06-27 14:12:58 UTC
Troj/Petya-BF	petya-bh.ide	2017-06-27 15:43 UTC	2017-06-27 15:46 UTC
Troj/Petya-BH	petya-bh.ide	2017-06-27 15:43 UTC	2017-06-27 15:46 UTC
Troj/Petya-AP	petya-bh.ide	2017-06-27 15:43 UTC	2017-06-27 15:46 UTC
Troj/Petya-BG	petya-bh.ide	2017-06-27 15:43 UTC	2017-06-27 15:46 UTC
Troj/Petya-BI	petya-bi.ide	2017-06-27 18:03 UTC	2017-06-27 20:08 UTC

2000 Vessels
19000 Clients

Confirmation of reception by Marlink subscribers:

```
27.06.17 14:04:26 Anti-Virus   12569 victoria-sun < ramni-fi.ide
27.06.17 14:23:04 Anti-Virus     588 victoria-sun < rans-eob.ide
27.06.17 15:53:35 Anti-Virus     767 victoria-sun < petya-bh.ide
27.06.17 20:13:07 Anti-Virus   32190 victoria-sun < petya-bi.ide
28.06.17 00:33:23 Anti-Virus   11621 victoria-sun < petya-bk.ide
28.06.17 04:43:06 Anti-Virus   18747 victoria-sun < miner-cp.ide
```

WannaCry & Petya were only two examples of attacks that eventually reached the Maritime industry.
There is unfortunately no doubt cyber threats will soon become more complex and more targeted to our business...

Marlink IT & Network
Security Solutions

Protecting your business in the Digital Age

How can I limit too many systems to connect to the internet?

How to keep my vessel IT permantely patched?

How can I securly remote manage my assets?

How can I detect an attack on my fleet?

Please contact Marlink to receive "**Marlink IT & Security Solutions Brochure"** and discuss how Marlink can help you deploying cyber solutions for your operations smartly!

Thank you! Any Question?

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Marlink Group