

Cybersécurité Maritime

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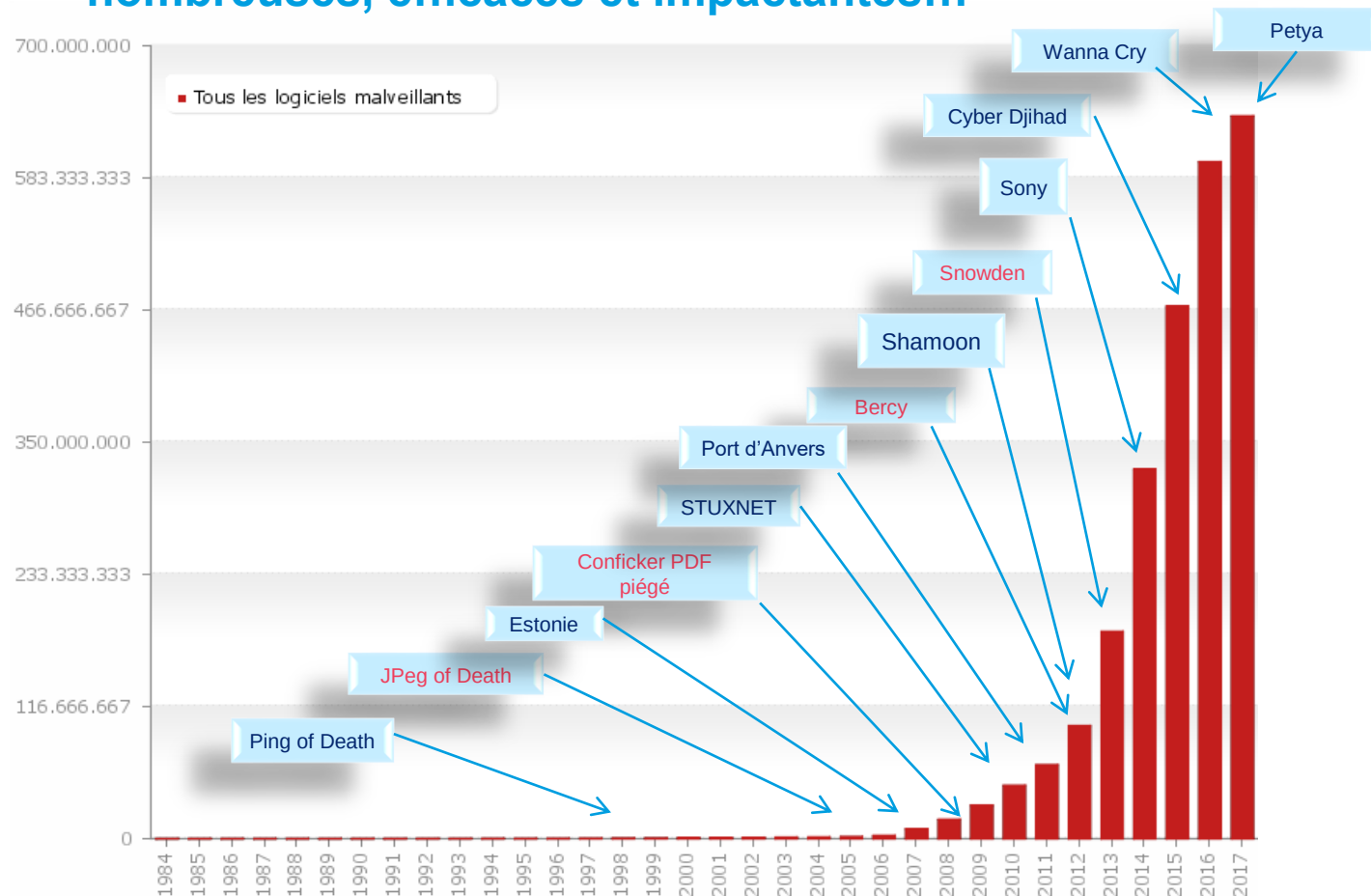


Assises du port du futur

Les 26 et 27 septembre 2017 à Paris

INTENSIFICATION DE LA CYBER MENACE

- Les cyberattaques sont de plus en plus nombreuses, efficaces et impactantes...



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- ...en 2017

« Ils ne mouraient pas tous, mais tous étaient frappés »,
Les animaux malades de la peste, La Fontaine, 1678



Industriels et Télécoms

- Renault /Wanna Cry (2017)
- Telefonica/ Wannacry (2017)
- Maersk/Not Petya (2017)



Medias

- Sites de la presse française (2017)



Partis politiques

- Elections américaines(2016)
- Macron Leaks (2017)



Entreprises du numérique

- Yahoo(2017)
- Messagerie Google(2017)

CYBERATTQUES DU DOMAINE MARITIME

- Octobre 2015: Défacement du site de la préfecture maritime



- Juin 2017 : attaque NotPetya, blocages de terminaux gérés par Maersk

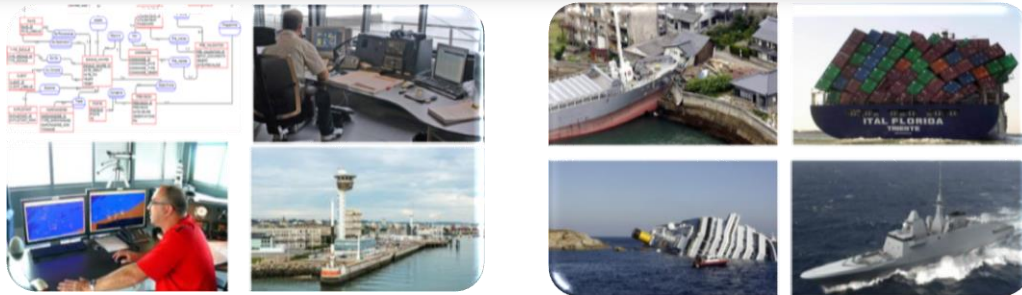


Year	Attacker	Title	Attacker	Attack Vectors	Target Profile	Target	Attack	Event
September 2001	Hackers	Port of Houston	Disruption of port's web service Disruption of shipping	DDoS	Houston Port Authority Systems Arriving transporter ships	DDoS Vulnerability Exploitation	It froze the port's web service, which contained vital data for shipping, mooring, and	Aaron Caffrey, 19, was accused of crashing systems at the port of Houston in Texas by hacking into its computer systems.
December 2009	General	GPS jamming and spoofing attacks	Experimentation (proof of concept)	GPS jamming	Maritime navigation systems (GPS part of AIS)	GPS signals are susceptible to jamming, interference and	Vessel miss-navigation, sunk, hijack/hiding vessel	GPS jamming and spoofing attacks on vessel navigation systems / experiment performed by the UK's Ministry of Defense on the THV Galatea
August 2010	State Actor	GPS Jamming Affects Ship Navigation off Korean Coast	service disruption, cyber intelligence,	GPS Jamming	GPS in ships	GPS signals are susceptible to jamming, interference and	vessel miss-navigation, sunk, hijack/hiding vessel	GPS Jamming Affects Ship Navigation off Korean Coast
December 2010	General	GPS Jamming Research	Research	GPS Jamming	GPS in Maritime	GPS signals are susceptible to jamming, interference and spoofing	Vessel miss-navigation, sunk, hijack/hiding vessel presence	GPS Jamming and its impact on maritime safety (Research paper, optional) http://www.porttechnology.org/images/uploads/technical_papers/PT46-09.pdf
March 2012	Criminals	Drug Traffickers	Smuggle drugs to Australian ports (Ship, locate, retrieve) Economic Damage,	Malware, Remote Access control	Australian Customs and Border Protection Integrated Cargo System	software vulnerabilities leaving the possibility for tracking the cargo through the	Tracking computer terminals through malware installed to gain	Crime syndicates are exploiting flaws in a federal government computer system that have enabled them to learn if shipping containers holding their drugs are being scanned and searched by authorities.
February 2012	General	English Channel	Experimentation (proof of concept)	GPS Jamming	Maritime navigation systems (GPS part of AIS)	GPS signals are susceptible to jamming, interference and	Vessel miss-navigation, sunk, hijack/hiding vessel	GPS Hacking May Sink Ships/GPS Hackers Put Shipping In A Jam
June 2012	State Actor	China vs India	Intelligence	systems bugs exploitation (unknown)	Naval Submarine System	systems bugs (unknown)	Data exfiltration	Chinese hackers penetrated the computers at Indian Eastern Naval Command - china vs india
April 2013	Hackers	Automatic Identification System (AIS) attack	General CIKR	hijack AIS traffic, eavesdropping on AIS messages, impersonation	Maritime Identification and Navigation System	Automatic Identification System (AIS) lack of encryption and authentication	collisions at sea, hijacking/hiding a vessel, miss-navigation	HD's serial port server research highlights the inherent insecurity of a large amount of network-enabling devices that bridge to the Internet normally isolated systems such as fuel pumps, oil and gas pipelines, power grids, traffic lights and many more odd and scary things.
April 2013	General	Cyber Vulnerabilities found in Newest U.S. Combat Ship	Experimentation (proof of concept)	U.S. Navy Internal (Confidential)	U.S.S. Freedom	Classified (unknown)	Classified Research	The newest combat ship in the U.S. Navy's arsenal, the U.S.S. Freedom, was found during a fleet-wide cyber assessment by Navy cyber security experts to have major cyber security vulnerabilities. The Navy is working with its contractors to correct the deficiencies, which remain classified. The Navy plans to buy 52 such ships in coming years.
June 2013	Criminals	Drug Traffickers	Smuggle drugs to US ports (Ship, locate, retrieve) Economic Damage, Criminal	Malware, Remote Access control	Navigation and Surveillance Systems (Antwerp city)	Malware infection, remote access vulnerability Navigation and Surveillance Systems	Tracking computer terminals through malware installed to gain access	Drug Traffickers Hacked Shipping Systems to Intercept Large Drug Shipments

CYBERSÉCURITÉ DU DOMAINE MARITIME

La numérisation des systèmes du domaine maritime :

1. Des systèmes nombreux, hétérogènes et de plus en plus interconnectés
2. Pas toujours conçus pour répondre aux cyber menaces



Vulnérabilité du secteur maritime

1. Blocage des terminaux de Maersk par l'attaque NotPetya (2017)
2. Cyber attaque d'Anvers (2011)
3. Ransomware bloquant un porte-conteneur à quai (2015)



Réponse légale:

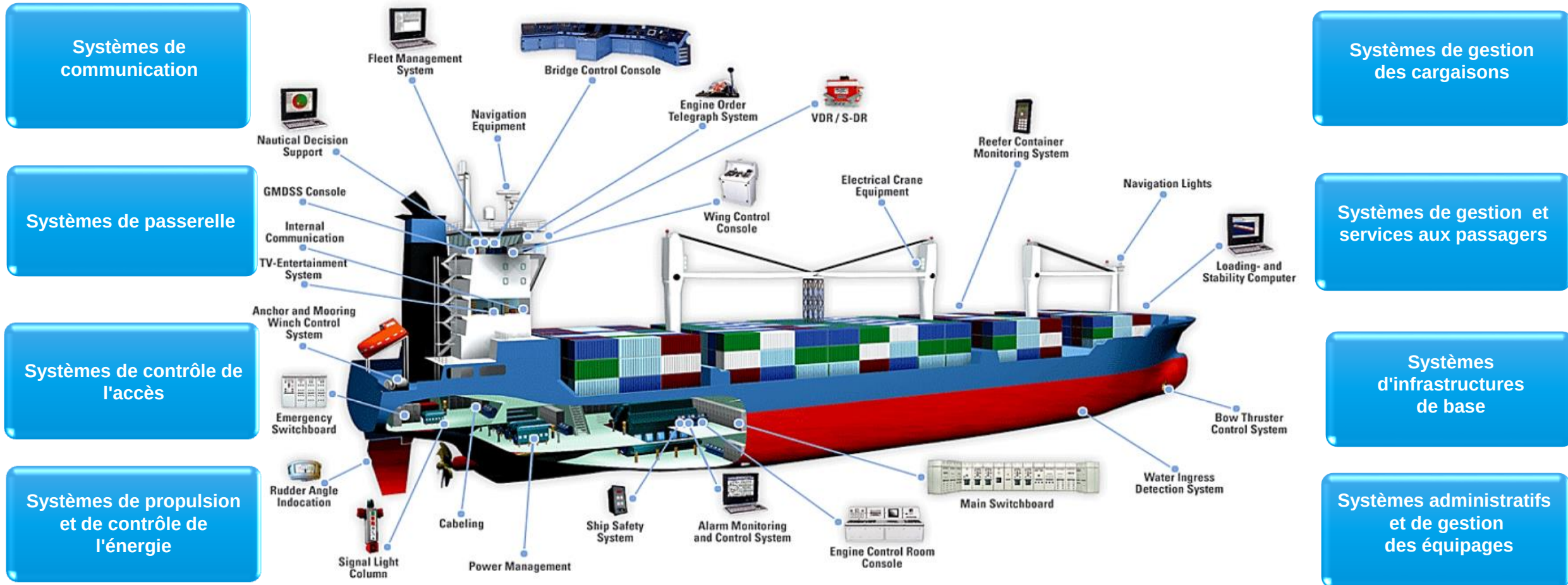
-LPM 2014-2019
Régime des OIV

-Directive NIS



Les ports civils doivent renforcer
leur capacité de cyber protection
Volet cyber de la gestion de risque globale

CYBERSÉCURITÉ DU NAVIRE



CYBERSÉCURITÉ PORTUAIRE

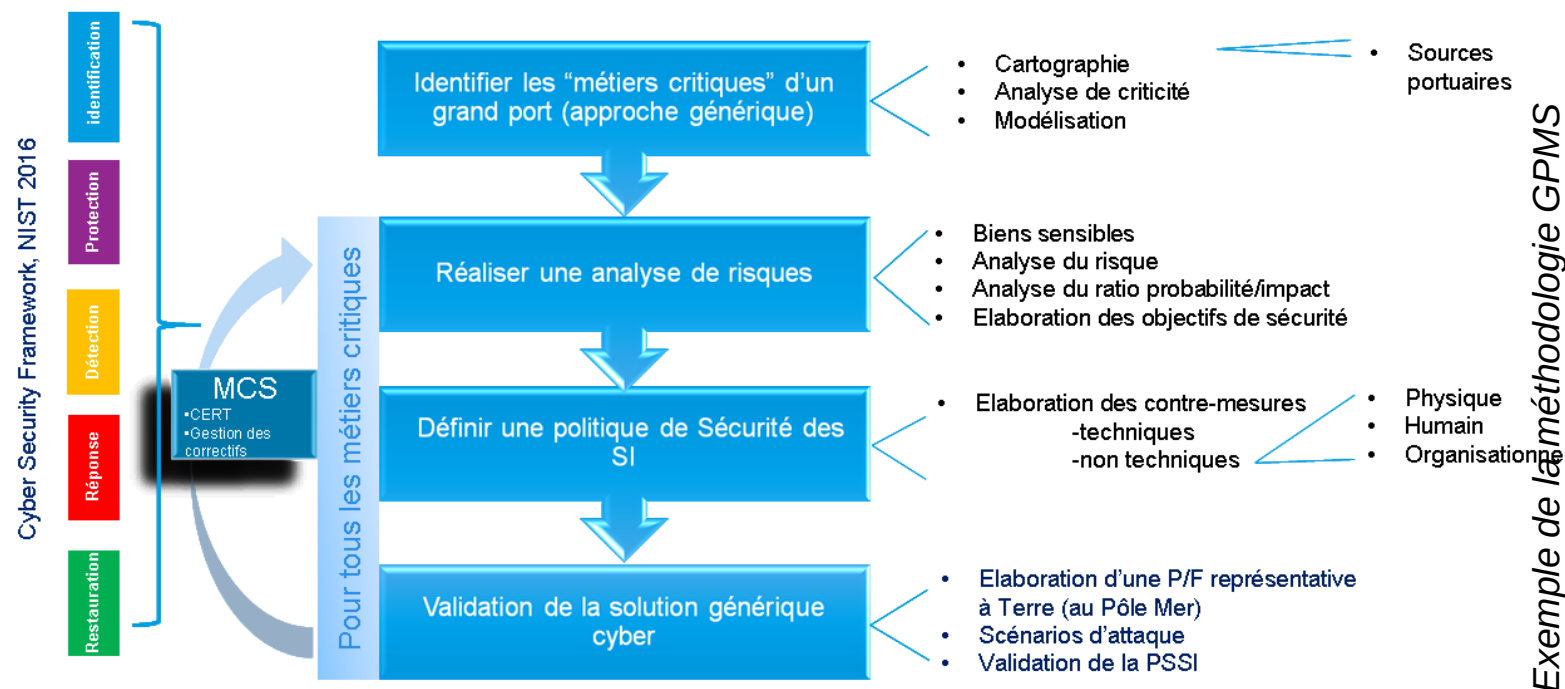
- Des systèmes portuaires de plus en plus numériques
- Tous ces systèmes sont potentiellement vulnérables, et en particulier les systèmes critiques



Vision Naval Group

Projets Coopératifs : dualité civile -militaire

- SRED (Sécurisation du Réseau Electrique de Distribution, Ports & Bateaux, projet PIA2 avec Schneider Electric)
- GPMS : Grands Ports Maritimes Sécurisés
- GNCS : Grands Navires Civils Sécurisés



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