SAFETY THROUGH KNOWLEDGE



# Digitalisierung braucht Qualifizierung oder Qualifizierung braucht Digitalisierung



- 1. Seagull company : Who we are?
- 2. Seagull Maritime : What we do?
- **3.** What means «Digitalization»?
- 4. Risks in «Digitalization»?
- **5.** Qualification for Digitalization
- 6. Discussion







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- Who knows Seagull ?
- Who used Seagull already ?



# World wide training







# 10,000 installations

# 550,000 seafarers

# 100,000 onboard course certificates



# What we do?





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# 3. What means Digitalization?



- "Internet of Things / IoT" an ever-growing network of interconnected devices, people and machines –
- 50 billion devices being linked by 2020
- fourth industrial revolution, Industry 4.0 or the industrial internet.
- 3D printing
- increasing use of "big data"
- increased efficiency,
- Greener technology,
- reduced maintenance, increased service levels and
- reduce the risk of human error (!)
- will change communication
- merger of physical and digital worlds => a growing reliance on technology
- production becomes more customized,
- Cyber security risk will increase, top long-term risk (!)





# 4. Risks in Digitalization

### **Maritime Digitalization**



Digitalization and technology progressing a significant challenge to many companies' business models as well.

- Airbnb (tourism),
- Apple (automotive),
- Google (insurance),
- Paypal (financial services),
- Skype and WhatsApp (telecommunications) and
- Uber (transportation) ...

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New players are turning business models "upside down", as they start from the perspective of the customer first.



- 1. Lack of cyber security awareness and training among employees
- 2. Remote work during operations and maintenance
- Using standard IT products with known vulnerabilities in the production environment
- 4. A limited cyber security culture among vendors, suppliers and contractors
- 5. Insufficient separation of data networks
- 6. The use of mobile devices and storage units including smartphones
- 7. Data networks between on- and offshore facilities
- 8. Insufficient physical security of data rooms, cabinets, etc.
- 9. Vulnerable software
- 10.Outdated and ageing control systems in facilities.





# Examples of Cyber Attacks in the Maritime industry

: Attackers tried to set up a backdoor into network

: Norwegian industry detected more than fifty cyber-attacks

: Hacking of cargo tracking system

: GPS jamming/spoofing

: Drilling rigs infected with malware



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Improvements & Importance of Awareness DNVGL-RP-0496 / Roll-out

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### **Cyber Security Improvement Roll-out**





# 5. Digitalization needs Qualification or Qualification needs Digitalization



- How to manage for hundreds of seafarers a qualification process?
- Crew qualification onboard, far away from training centers, offices..?
- Maintaining company wide qualification standards?





## **Reference customers**







### **Digitalization of training**

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# Knowledge

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Skills (+ Experience)

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Attitude (Commitment and willingness to perform)





# Competence Management System



- Quality assured career path
- Minimum required Competencies
- Critical Competencies
- Competent before promotion

## **Developing competences**

Practical on-the-job learning is the most important element in the competence of seafarers



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# Example: «digital» qualification onboard Container vessels





Knowledge Assessment, Competence Tree and Training Titles are linked together in order to enhance the knowledge and competence of the crew.



### **Crew Evaluation System - question**

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#### **Question preview**

#### Question

And the second s

A common problem associated with twist-locks is:

#### Alternative A \*

Left hand and right hand types exist, causing uncertainty whether a fitting is locked or open







### **Competence Management proficiency**



# Container loose fittings – various types



### © 02.01.17 Re-stow and change of destination © 02.01.18 Container loose fittings – various types Container fixed fittings - various types **Rank requirements Proficiency details** Critical for rank Yes Guidelines 17. Base Transversal TWIST lock 18. Intermediate Twist lock 19. Semi-Automatic Twist lock 20. Actuator Pole for Twist lock Criteria for Evaluation Reference Material 1. Company SMS manuals and relevant checklists/forms



CBT title covering theoretical knowledge

# $\bigcirc$

### CBT # 0045 Container lashings "Introducing container lashing arrangements."





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### **Container e-learning**

#### #0403 Container ships, Securing Cargo Awareness





- Module aim: The learner will be able to recognise the contributing factors that lead to containers being lost at sea.
- **Vessel type:**
- **References:**

Container

- Code of Practice for Cargo Securing and Stowage (CSS Code) IMOMSC.1/Circular.1353 - Revised Guidelines for the Preparation of the Cargo Securing Manual— (30 June 2010) SafeTransport of Containers by Sea:Guidelines on Best Practices A Master's Guide to Container Securing Edition 2
- **Target group: STCW Management and Operational level – Deck** Note: Tokyo MoU focus area from 1 Sept to 30 Nov 2016 is Cargo Securing Arrangements



### **Container e-learning**

#### # 0404 Container ships, Securing Cargo Arrangements



- Module aim: The learner will be be able to recognise how lashing systems help secure containers and resist their movement in a seaway.
- **Vessel type:**
- Container

**References:** Code of Practice for Cargo Securing and Stowage (CSS Code) IMOMSC.1/Circular.1353 - Revised Guidelines for the Preparation of the Cargo Securing Manual— (30 June 2010) SafeTransport of Containers by Sea:Guidelines on Best Practices A Master's Guide to Container Securing Edition 2 **Target group:** STCW Management and Operational level – Deck

Note:

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# **Competence Management Principle**

- Quality assured career path
- Minimum required Competencies
- Critical Competencies
- Competent before promotion





### **Cyber Organised Crime starts with Social Engineering**

- Remember the Nigerian prince scam?
- Now + more sophisticated:
  - Systematic decomposition and in depth understanding of Emotional Triggers











## **Cyber Security / Social Engineering**







# Seagull & DNV GL - Maritime Cyber Security awareness e-learning

### Attack tactics



Let's look for an example in e-learning

# Seagull & DNV GL - Maritime Cyber Security awareness e-learning

### Traps

1	W	hat's Ha	opening	4
	Twitter 6	Tweels Tweets & replies Noted	Arr 10 Twitter?	
<	Twitter and other short message services abbreviate internet addresses by short alias names. Hackers may hide links to malware behind these shortened alias names. Apps such as TweetDeck allow you to preview the links and let you see the full URL before you click on the site. Always check that the tweet link is what it says to be.			
	may hide links to malware beh preview the links and let you se Always check that the tweet links	ind these shortened alia: e the full URL before you nk is what it says to be.	s names. Apps such as TweetDeck allo click on the site.	w you to



# 6. Welche weiteren Qualifikationen erfordert die Digitalisierung ?

