



VOLKER BERTRAM

What's Next: A Glance into the Future of Shipping

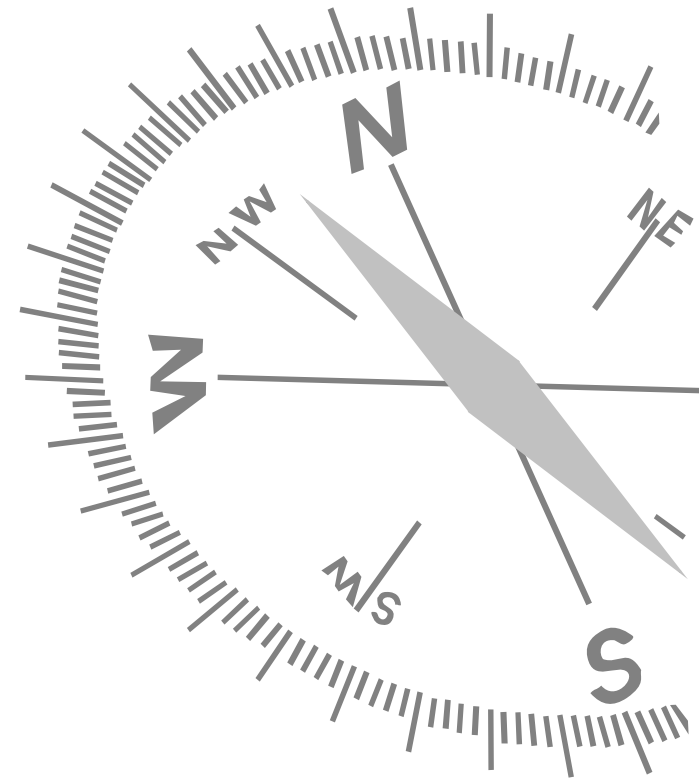
Navigator

➔ Digitalization – The business side

Smart Ship Operation – The technical side

Green is the new smart

Conclusion



What is it?

- A buzzword...
- “Amazon-like” business



Disruption ahead for brokers

- Amazon cuts out the middle-man
- Quicker & more transparent



Transparency in logistics

- “AIS for cargo” (IoT)
- Performance-based contracts

A magnifying glass is held over a collection of file folders. The lens is focused on a white folder with the word 'TRANSPARENCY' printed in bold, black, sans-serif capital letters. Other folders in the background are slightly out of focus, showing various labels like 'COMMUNITY F...', 'ST...', and 'TH...'. The magnifying glass has a black handle and a silver-colored rim.

TRANSPARENCY

Block chain technology for documents

Digital "Paper-Trail"

- Cargo certificates
- Crew certificates
- Ship certificates

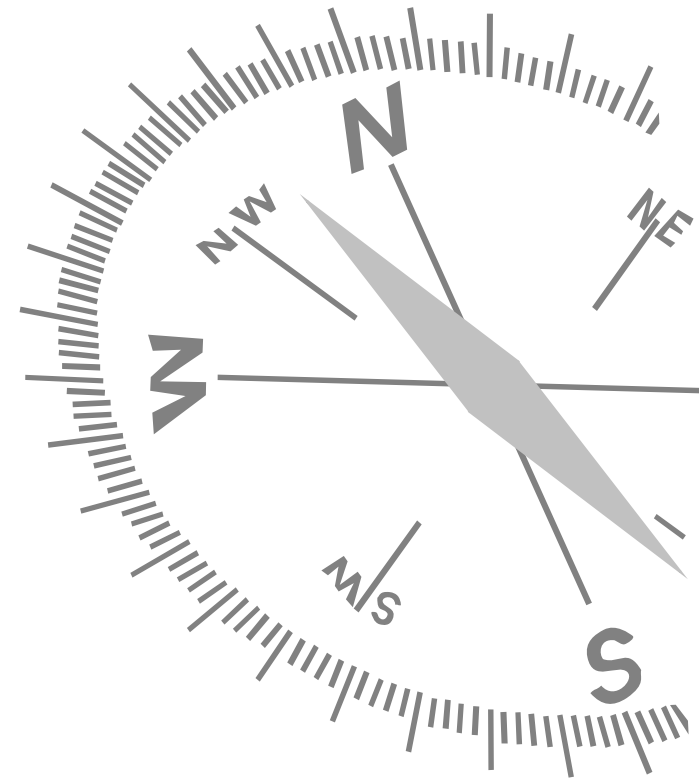
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Future shipping – smart & autonomous rather than unmanned

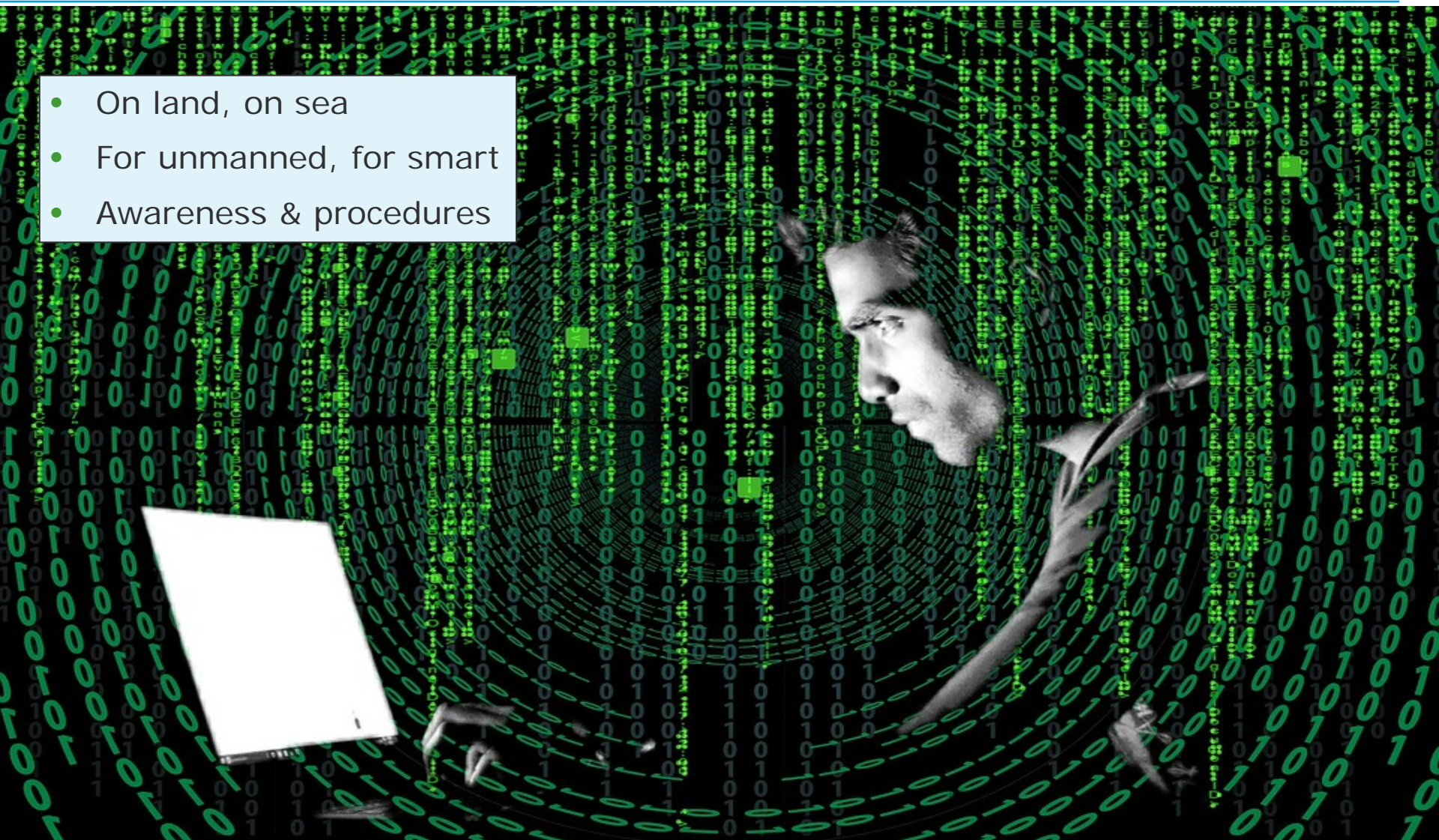
“Like a Mercedes”

- Better work environment
- Safer shipping



Cybersecurity – Part of our daily life

- On land, on sea
- For unmanned, for smart
- Awareness & procedures

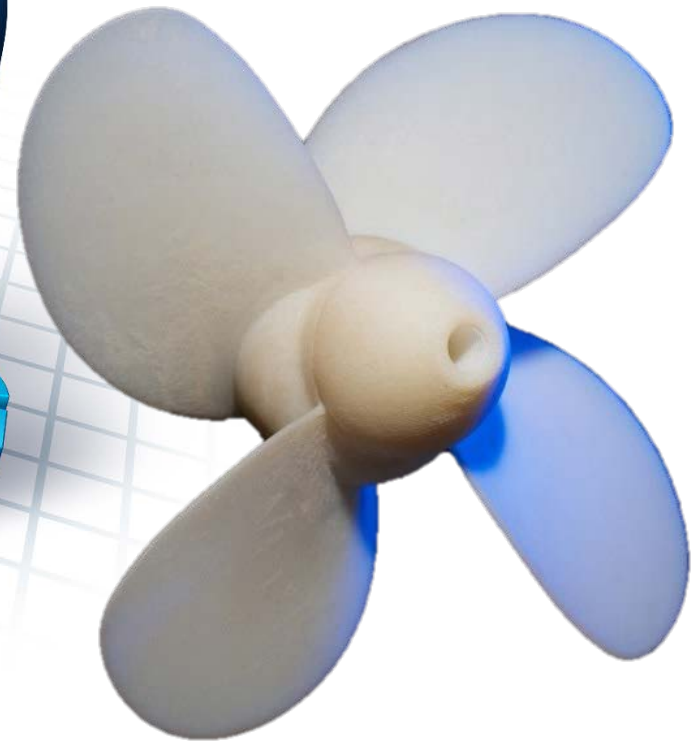


Digital Twins as smart enablers

- Simulation models
- Updated by Big Data
- From yard to owner

3d printing – Yes, but mainly for spare parts

3D
PRINTING



- Accuracy?
- Material properties?

E-Training replacing class room training



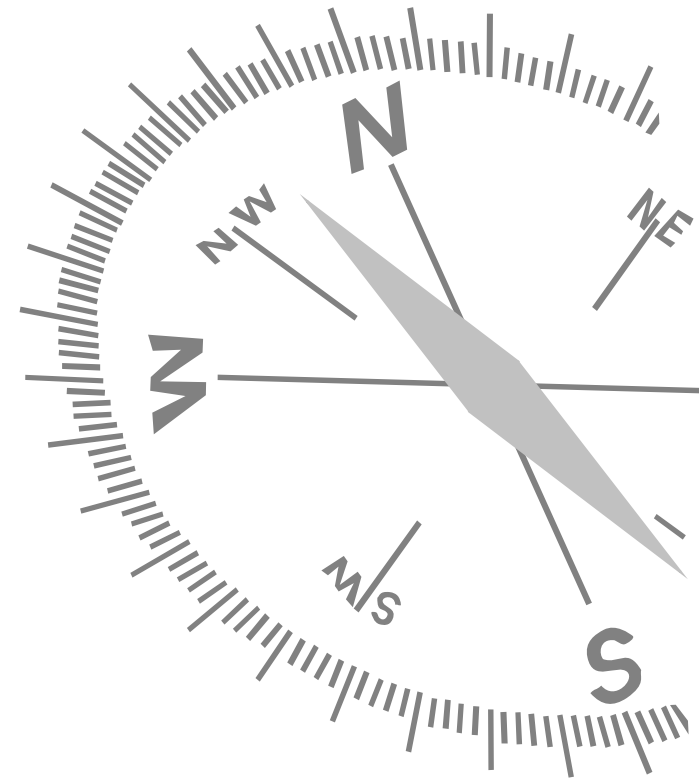
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King HFO is (almost) dead, long live...



... The fuel mix – Down with CO₂ and SO_x

- LNG
- Methanol
- Low-Sulphur diesel
- ...



The mix will change – Still down with CO₂ and SO_x

- Biofuels (algae-based)
- Hydrogen
- ...



The next in line is... Antifouling

- Biofouling Guideline of IMO
- Many ideas for biocide-free coatings, none clearly dominant
- Documentation & Management Plans

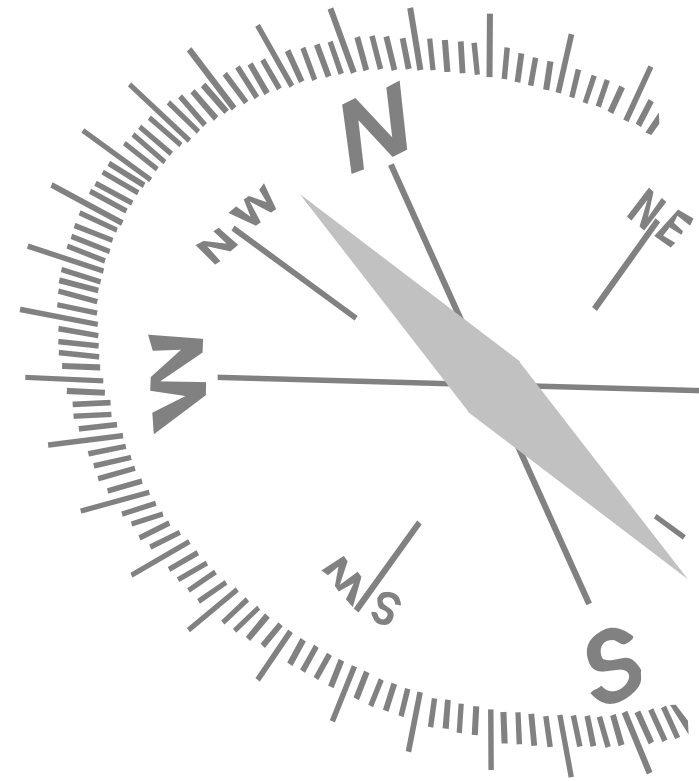
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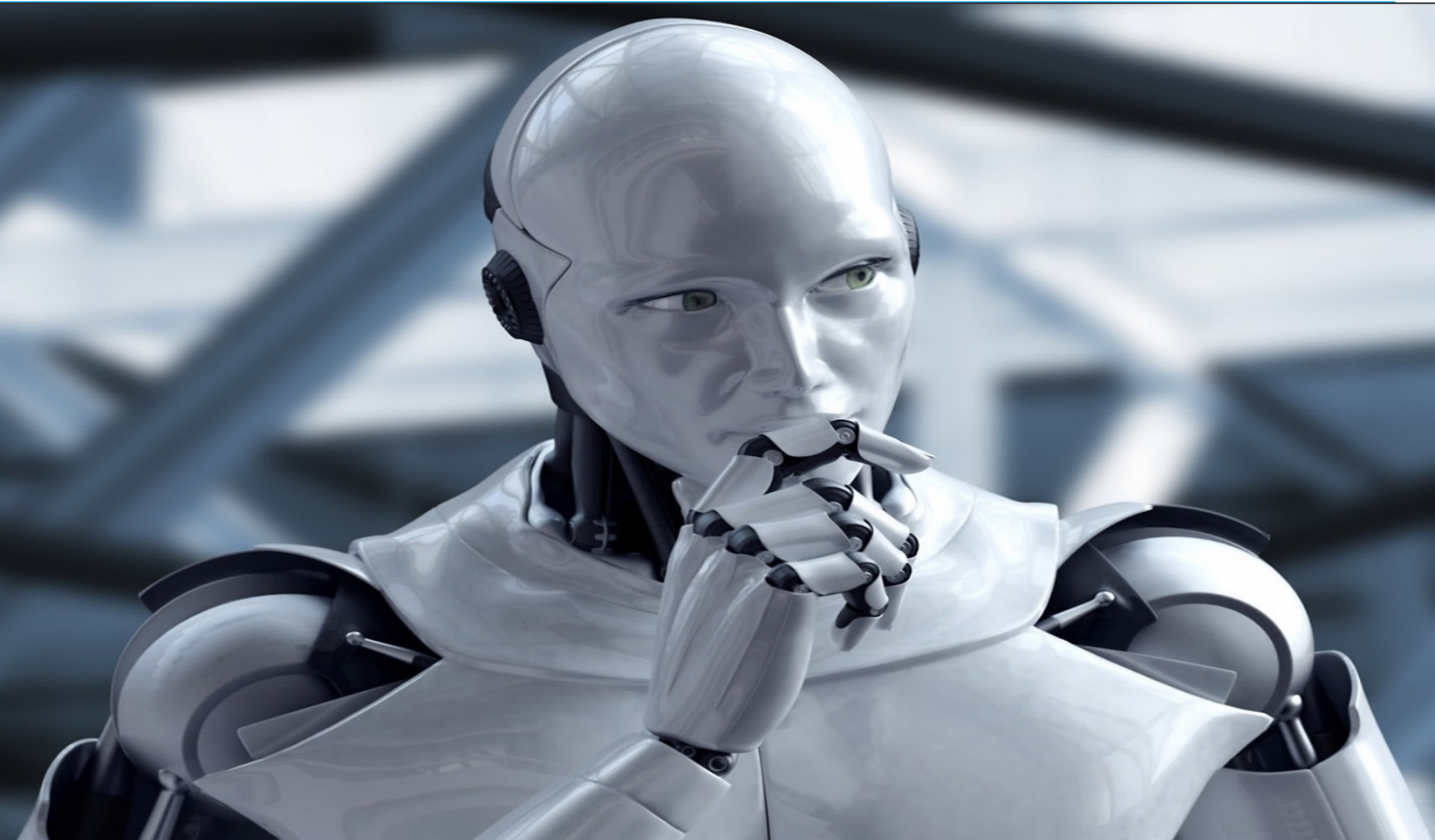


Embrace change – As you have always...



If you are not part of the steamroller,
You will be part of the road.

Questions?



We are here to help you

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SAFER, SMARTER, GREENER

