

How, what and why of AI procurement

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Marcus Evans

Technology is having an increasing impact on how ships are managed and how trading by sea is organised. The opportunities afforded by the application of advanced technologies, including Artificial Intelligence (AI), could not have come at a more crucial moment for shipping, which is faced with enormous challenges imposed by the need to decarbonise, together with an ever-rising tide of regulation.



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Technology, including AI, can help bridge the gap between the current position and getting to net zero by improving the efficiency of ships and shipping operations. AI-based tools can plan routes and cargoes, ease congestion by better real-time management and make the supply chain more efficient. Controlling a whole logistics chain, from trucks to ports to ships, can allow the application of technology through blockchain and AI, achieving more efficient operations by reducing delay, adjusting the speed of steaming (just-in-time arrival) and planning the most fuel-efficient voyages.

The shortage of quality crew is causing a significant squeeze, and most accidents have a degree of human error involved. While autonomous ships may be some way off for internal combustion engine powered ocean freighters, the potential in coastal electrically powered shipping is huge, and ships are already afloat which may well become completely autonomous in the short to medium term.

The International Maritime Organisation is progressing with an international regulatory framework for maritime autonomous surface ships (MASS) to allow these to be introduced safely in crowded shipping lanes. Repetitive but complicated tasks are well-suited to AI, and ocean surveying, for instance, is now conducted by drones using advanced robotics and AI.

But there are challenges to be overcome. It will be important to introduce AI safely. Safety of lives at sea and prevention of marine pollution - the two cornerstones of maritime regulation - must remain at the forefront of any consideration of the introduction of AI. The shipping industry will have to understand AI a lot better if it is to be procured and deployed correctly and confidently across the sector.



Credit: Microsoft/Bing Copilot

Various issues need to be addressed in an AI procurement contract

REGULATING AI

AI is increasingly the focus of regulatory initiatives. The EU AI Act within Europe is a case in point and has significant implications for the deployment of AI in, and into, Europe. The Act imposes significant fines for non-compliance. The maximum fines go up to the higher of €35 million or 7% of global turnover for breaches relating to banned AI applications, with fines of €15 million or 3% for breaches of the Act's other obligations, and €7.5 million or 1.5% for the supply of incorrect information.

Sector-specific regulation of the use of AI will also be likely, particularly in sectors such as maritime where AI use could give rise to serious health and safety, environmental and liability issues.

In terms of liability, the EU is in the process of legislating to change the EU Product Liability Directive, extending it expressly to AI relevant in a B2C context, and is also proposing an AI Liability Directive to address some of the complexities in establishing liability in relation to AI - of more relevance in a B2B context.

What is unique about AI that changes the approach to contracting for its procurement? AI is software. The AI deployer may receive a copy of the software under a licence or access AI's processing functionality through, say, a cloud-based service (so-called "AIaaS"). It is therefore tempting to treat the contractual procurement of AI just like



Credit: Microsoft Bing Copilot

An AI system could rely on various stakeholders giving access to their information for training

any other software or IT services procurement. However, AI differs from traditional software (including algorithms) in a number of ways:

1. The most important difference is that it can learn (from datasets), improving its ability to make predictions (or decisions). In learning, it can reflect undesirable biases in its outputs/decisions, taken from the underlying data upon which it has been trained, raising ethical issues (particularly where humans are affected).

2. AI's decision-making may be opaque, so that it may not be possible readily to discern the basis (and criteria) it has used in producing an output (such as a decision or prediction). This can raise issues of transparency, governance and liability. For example, when faced with two scenarios, both of which might cause loss of human life and/or damage to the environment, which scenario might an autonomous shipping AI system opt for, and on what basis?

3. In learning, AI may effectively "absorb" the deployer's data to which the AI system was exposed. If the provider continues to control that iteration of the AI, this can have serious implications for the deployer in terms of: (1) ownership and control of its own intellectual property rights; (2) loss of confidential and commercially valuable

data; and (3) adverse impact on competitive advantage vis a vis competing businesses.

These various issues, among others, need to be addressed in the AI procurement contract.

PROCUREMENT CONTRACT

The requirements of traditional software development and supply and cloud-based IT services are well known and are not outlined here. We are concerned only with what is particular to AI. Obviously, what a deployer will want to include in its AI procurement contract with the provider depends on the supply model they choose (see the box out), but it may address the following elements (these are not exhaustive):

- System training: the system may rely on various stakeholders to give access to their information to train it (shipping has a poor record of sharing and collaborating – between ship owners and between ship owners and charterers. The responsibilities of the parties will accordingly need to be set out very clearly contractually);
- Segregation of AI iterations that include deployer data from the provider's core system;
- Explainability: a specification requirement and/or warranty that the AI system's outputs are transparent/

explainable, coupled with the ability of the system to produce logs showing how a decision/output was reached;

- Ownership of intellectual property rights in outputs generated by the system;
- A warranty from the provider that the AI system complies with all laws (including the requirements of any AI regulation), and a requirement on the provider to provide the deployer information in relation to the AI system to enable the deployer to comply with its own regulatory obligations;
- Liability – for example, who would be responsible for a collision between AI-controlled vessels?
- Cyber security: the provider's requirements in relation to the system and the deployer's data; and
- Audit: ability of the deployer and its regulator to audit the provider's compliance with the contract and regulatory requirements.

PROVIDER'S NEEDS

As with the deployer, what the provider will want to include in the AI procurement contract depends on supply model it chooses. Many of the things that a deployer will want included will be resisted by the provider, especially in relation to liability. A provider will also resist suggestions that it should somehow be responsible for the deployer's own regulatory compliance in relation to AI.

In addition, a provider may want to address the following elements in the contract:

- Circuit breaker: as with IT contracts that include a right of a supplier to suspend the service for a period, the provider may require the right to include a "circuit breaker" for temporary suspension of the service. This may be necessary to ensure compliance with law or to prevent deployer misuse;
- User manual: requiring the deployer to comply with a user manual may help the provider to discharge its own regulatory obligations;
- Permitted use: for the same reasons, the provider will wish to restrict the deployer to using the system only for specified permitted purposes (for example, those that are not prohibited or even high risk under the EU AI Act; or use in breach of export restrictions, such as use in the nuclear or weapons industries); and
- Human oversight: a provider may require a deployer to warrant that it will have human oversight over its use of the system. This may be to assist the provider in discharging its own regulatory obligations as a provider of the AI, and/or to limit the provider's own risk profile in relation to the deployer's use of the AI.

RELEVANCE OF EU AI ACT

There are some maritime applications that are specifically classified by the EU AI Act as "high risk" and are therefore subject to certain prescriptive requirements under the Act. These include items covered by legislation listed in Annex I to the Act (for example, "recreational craft and personal watercraft"; "radio equipment"; and "maritime equipment"). The Act envisages that AI deployments

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Does the development and supply model change what should be in the AI procurement contract?

What the parties should have in their contract depends on their development and supply model, and the implications that has for risk allocation between the provider and deployer – for example:

- Will the AI be supplied "off-the-shelf" (uncustomised), or will it be developed either from scratch or by way of customisations to an existing core?
- Will the AI be a licensed iteration or will AI processing be provided as a service (AIaaS)?
- Will the AI be trained using the deployer's data?
- Who will be responsible for such training and for the outputs resulting from it?
- Do the parties wish to partner in the development (i.e., not simply an arm's length supply arrangement)? This could have regulatory as well as contractual implications. For example, the regime contemplated by the EU AI Act may not fit easily with a risk-sharing model such as this.

falling within these types of cases will continue to be subject to their own conformity assessments under existing EU legislation.

A detailed consideration of the Act's requirements in relation to high-risk systems is beyond the scope of this article, but where a maritime application is in scope under the Act, both the provider and the deployer will need to ensure that their respective regulatory obligations are made "back to back" in the procurement contract, so that each can discharge the regulatory obligations applicable to it. The parties will also need to do this exercise in relation to any maritime-specific AI regulation, as it emerges.

Like shipping itself, AI applications will be used across borders in a maritime context. Different AI regulatory regimes (including maritime sector-specific regulation) may apply in such circumstances. The AI procurement contract will need to cater for such international variation, and specific local law advice will be needed to inform the requirements of the contract.

Finally, the contract will also need to be flexible enough to cope with new AI regulation as it emerges (especially maritime-specific AI requirements). A well-drafted contract can do this through appropriate "change control" and cost-allocation mechanisms. **SN**

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