

# Supporting Indigenous Naval Construction

## A necessity or an option?

**Darren Grint**

**BAE Systems Maritime, Business Development Latin America**

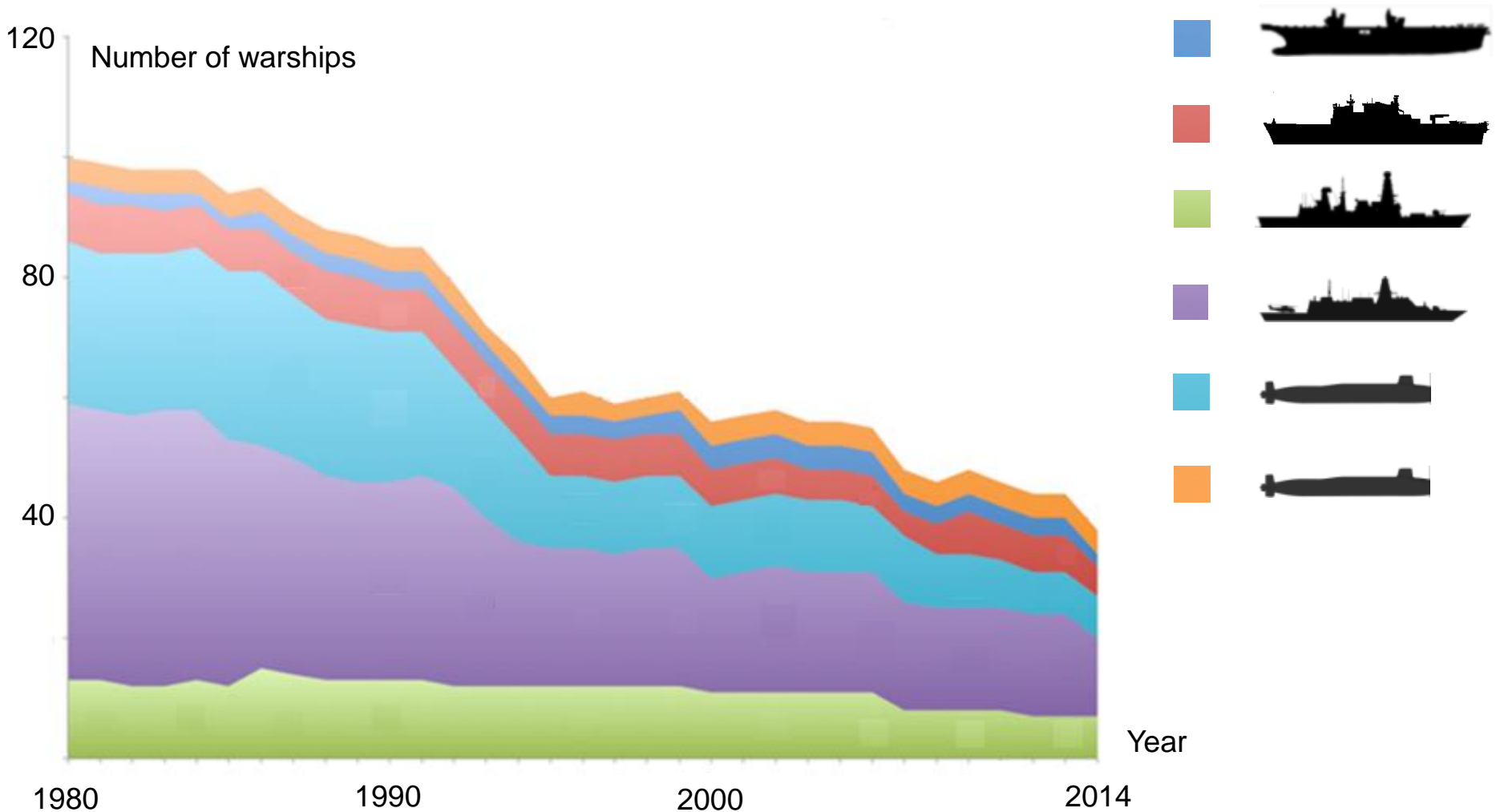


# Agenda

- Changing size and shape of UK Royal Navy
- Evolving UK industrial landscape
- Changing requirements of international customers
- Technology transfer – what is it?
- Proven platform technology transfer
- Technology transfer underpins international strategy
- Conclusion
- Questions



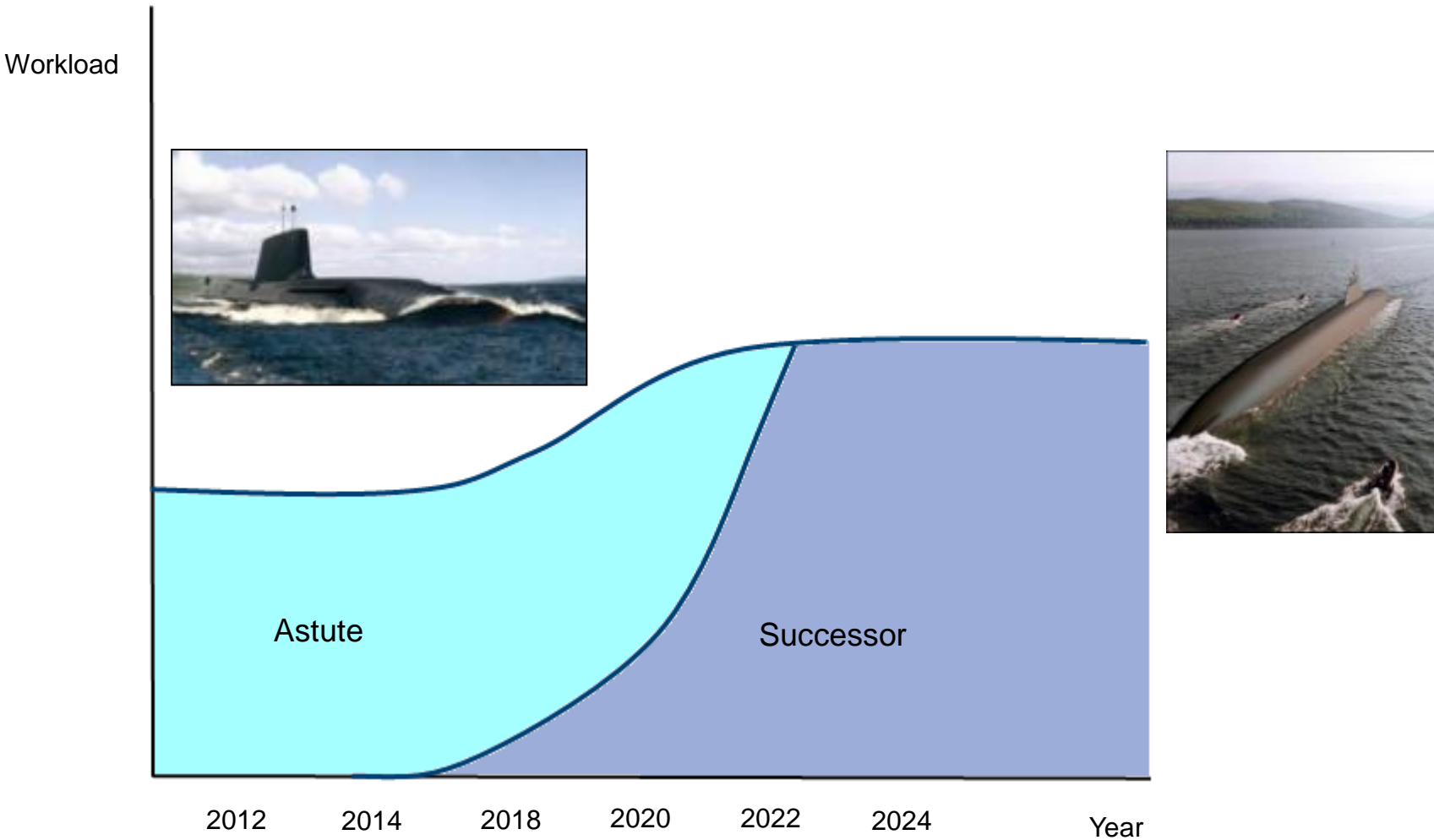
# Changing Size and Shape of UK Royal Navy



# Evolving Industrial Landscape

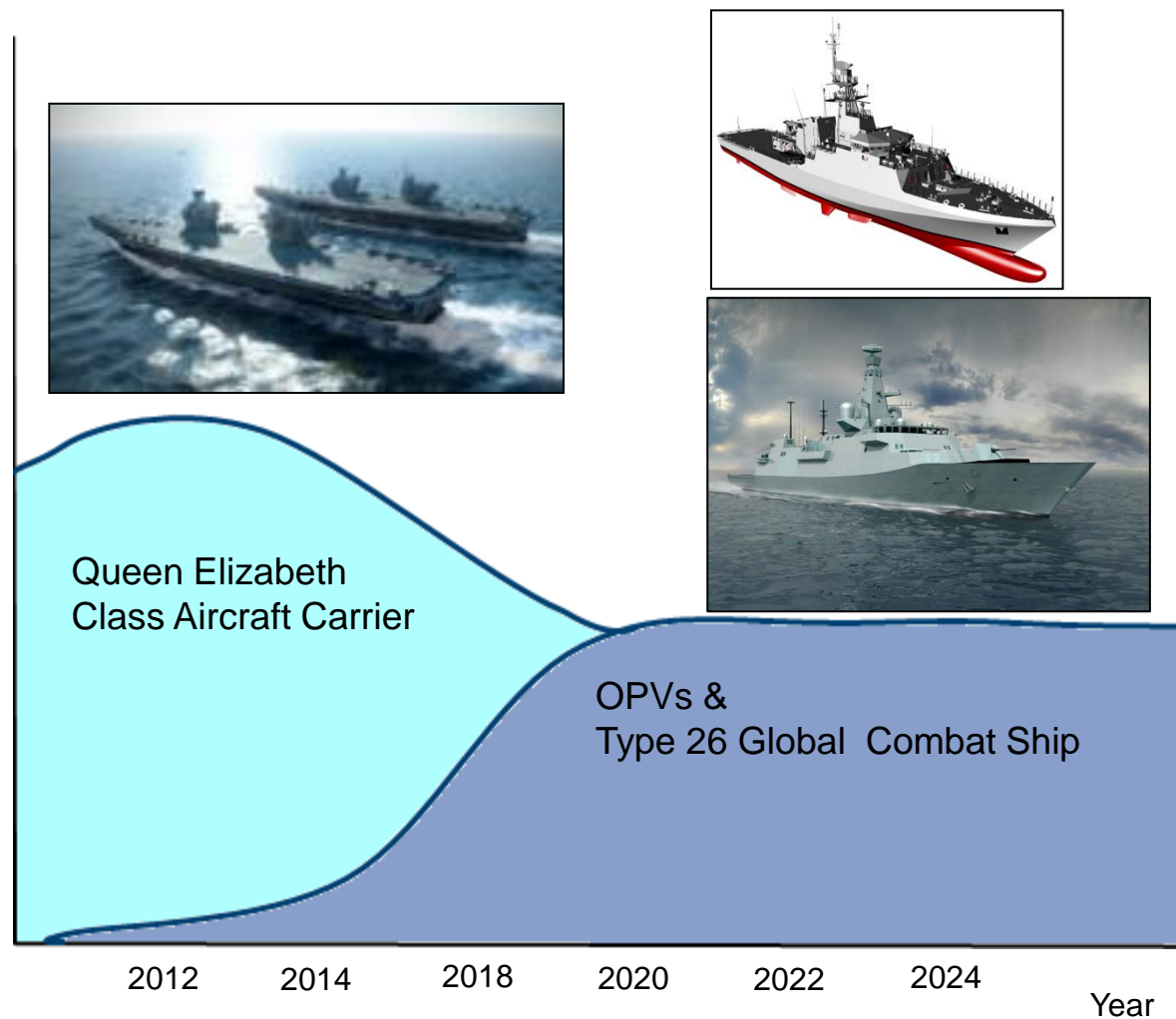


# Future Industrial workload for Sub Surface Fleet



# Future Industrial Workload for Surface Fleet

Workload



# Changing Requirements of International Customers

- Countries re-equipping or rebuilding their maritime forces
- Development of indigenous capabilities and growth of sustainable shipbuilding capability
- Aspirations for complex warship design integration and build
- Joint programmes with ambitions to ultimately export
- Move towards 'build under licence' or bespoke modular designs
- Requirement for training and education
- Partnerships at both industrial and Navy level





# Technology Transfer – What is it ?

## Design and Engineering



## Maritime Integration and Support



## Project Management



## Integrating Complex Military Systems



## Shipbuilding/Physical Integration



## Systems Proving – Trials and Acceptance



## Build and Support of Small Craft



## Warship Upgrade, Reactivation and Disposal



## Warship Availability Services



## Integrated Naval Base Services



## Training Services



## Products & Equipment Services





# Our Proven History of Technology Transfer



Mk45 5 Inch



Typhoon



Niteroi Class Frigate



Gulf Logistics and Naval Support



Fast Attack Craft



KDX I & II CMS



Offshore Patrol Vessel



Hawk

# Naval Technology Transfer

- OPV in Thailand and Fast Attack Craft in Greece
- Adaptable designs can be altered according to individual customer needs
- Proven in service designs
- Alternative approaches to supporting local construction
- Combat system technology transfer
- Creating a warship build & integration capability
- Creating a warship support and maintenance capability



# Proven Indigenous Platform Construction

- 90M OPV - Thailand (Bangkok Dock) for the Royal Thai Navy



- Transfer of basic design and CAD model
- Specialist support for modifications
- Provision of technical assistance
  - UK based experts in dedicated project office plus resident naval engineer in Thailand
- Prime responsibility with Bangkok Dock
- 1<sup>st</sup> Platform in service
- Discussions started on 2<sup>nd</sup> platform

# Proven Indigenous Platform Construction

- 62M Fast Attack Craft – Greece (Elefsis) for the Greek Navy



- BAE Systems;
  - Design Authority and major subcontractor to Elefsis
  - Created basic design and detailed engineering specifications
  - Material and equipment procurement
  - In Country team to provide construction oversight & support
  - Technical assistance to support integration & Acceptance
- 5 Platforms in Service
- 2 More currently in construction

## Other Platform Solutions - Corvette / Light Frigate

- 99M Corvette



- 3 Platforms in service with Royal Navy of Oman
- Multi Mission platform
- Robust deterrent : Littoral or deep sea
- Accommodate 12t helicopter
- Reduced ship signatures
- Designed with increased survivability & crew comfort





# Other Platform Solutions - Corvette / Light Frigate

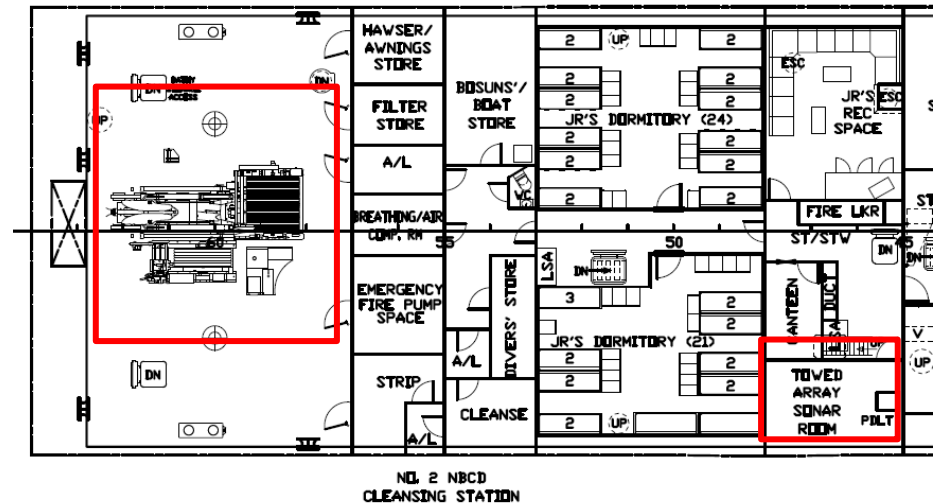
## • 102M Light Frigate



- 99M Corvette extended to accommodate Towed Array Sonar
- Platform extended to 102M
- Local Area Air Defence System entering service with the Royal Navy (CMS-1, Artisan Radar & Sea Ceptor)
- 12 Cell SAM fit
- SSM & Medium calibre gun

### Dimensions

- Length Overall : 102m
- Length Waterline : 93m
- Beam : 14.60m
- Depth : 8.50m
- Draught amidships : 4.10m





# Technology Transfer underpins international strategy

- Create partnerships with industry partners around the world
- Help support growth of sustainable and indigenous shipbuilding capability
- Help establish a combat system design, integration and support capability
- UK ships built in the UK and ships for international customers built indigenously
- Develop tailored solutions to transfer our design, manufacturing and support services
- Export ships jointly to other nations with our international partners



# Conclusion

- For the future UK Maritime industry, technology transfer is a necessity not an option
- UK manufacturing industry is being sized to build UK ships and retain its unique engineering, supply chain, integration and support skill base
- We see future ships for international customers being built indigenously in partners' countries with full technology transfer across all aspects of the life cycle
- The partnerships have to be both industry to industry and navy to navy. The UK is fully committed to this
- The UK has a proven successful track record of international technology transfer



# BAE Systems Maritime

## Thank you

Darren Grint  
+44(0) 780 171 3537  
[Darren.grint@baesystems.com](mailto:Darren.grint@baesystems.com)

