Proposal to modernise the Methodology of Teaching, Assessment/ Examination

ETO- STCW III/6 CoC	Name of respondent, organisation and role:		
Competency/ Module: Implementing Small Local Area Networks			
Knowledge, understanding and proficiency	Recommendation of working group regarding the outcome and objective.	Rationale	Action required
Outcome 1: Explain the main LAN types, their operation and relative merits	Modernise	Contextualise to make relevant to the systems used on board.	Expand this outcome to include CCTV, WiFi, fire detection and VOIP systems. Introduce a greater focus on the practical elements of connecting the systems. (Cisco's Networking Fundamentals course)
1.1 Explain the relationship between bandwidth and data transmission rates	Keep	Relevant	None

1.2 Describe the topology and operation of the main LAN types	Modernise	Modernise to focus on types of systems in addition to topology.	More focus on the types of systems, as opposed to topologies, such as: - RS 232 which is used in connection with PLCs etc. - Ethernet with Cat 5 straight through vs twisted pair. for use with PLC, CCTV, Communication, VOIP - Power over ethernet. - Telephone systems and cables. - Fire alarm systems, detector systems. - Security systems such as door entry systems, card entry, key fob. - HDMI for smart TV's - Optical connections for audio systems (These are common issues that will come up on Cruise ships with lots of entertainment systems).
1.3 Explain the relative merits of each transmission media in terms of data rates, installation cost, noise immunity, reliability and cost	Keep	Relevant	None
1.4 Advantages/disadvantages of peer to peer and client server LANs	Keep	Relevant	None
Outcome 2: Implementing Small Local Area Networks	Combine	Consider merging with outcome 1 for efficiency.	Combine this module with outcome 1.

2.1 Explain the effect of the size of the network on choice	Keep	Relevant	None
2.2 Explain the effect numbers of users and frequency of use has on the choice	Keep	Relevant	None
2.3 Explain the effect of types of files to be transferred across the network on bandwidth requirements and hence choice of network	Keep	Relevant	None
2.4 Justify the selection of either a peer to peer or client server operating system	Keep	Relevant	None
2.5 Explain the implication of types of external links (Internet, etc) and required data rates to the LAN	Keep	Relevant	None
Outcome 3: Install and commission a small LAN	Modernise	Contextualise to make relevant to the systems used on board.	Expand this outcome to include CCTV, WiFi, fire detection and VOIP systems. Introduce a greater focus on the practical elements of connecting the systems. (Cisco's Networking Fundamentals course)
3.1 Select appropriate type of cable and connectors for the network	Modernise	Contextualise to cover relevant topics for onboard practice	Include these key points for onboard practice: - How to test connectivity through the network. - Routers - interrogation and setting them for an IP network. - Computer software and virtual machine setup. (How to set up a computer to run software)

			- BIOS/Windows/network administrator/active directory.
3.2 Select appropriate network interface cards (NICs)	Modernise	Contextualise to understand how these would be used in conjunction with shoreside and manufacturers	Include information about accessibility from shoreside/ manufacturers side
3.3 Correctly install cables, NICs and any other necessary network equipment	Modernise	Contextualise to cover relevant topics for onboard practice	Include practical installation of cables for the different kinds of systems. The mocked-up boards of the different systems should be available so that the systems can be wired in. The mock-up should allow for faults to be introduced at different points so that an element of fault finding could be included for these specific systems. The benefits and advantages of fibreoptic cables should be introduced. However, While an appreciation of complexity is required, terminating of fibreoptic cable is not needed as a practical exercise. Include set up of unnetworked computer. (Limitations of equipment to be taken into account)
3.4 Select and install appropriate uninterruptible power supply and surge protection equipment	Keep	Relevant	None
3.5 Use supplied test software to verify the correct operation of the LAN	Keep	Relevant	None
Proposal submitted by:			

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	Any other outcomes for this competency, above and beyond STCW which would be needed due to use of modern technology and impact of future fuels onboard:		
	Objective	**Reason Why**	**Action required**
Cadet Training & Modernisation Working Group	Include Human Element Factors throughout the syllabus	To provide seafarers with a contextualised understanding of the Human Element in the maritime industry, showing how they can put theory into practice in the work they carry out at sea.	Raise awareness throughout the Cadet's training of the areas in which human element factors will have an impact. Recommendations on where this can be included have been noted throughout the entire syllabus. Not every template has Human Element Factor recommendations but please do add any you feel may have been missed.
Cadet Training & Modernisation Working Group	Include Data Science skills throughout the syllabus	Data Science Skills (Comprehension, Analysis, Presentation, etc...) are already required within much of the syllabus. A further, specific focus on these skills needs to be taught where relevant.	A specific topic will need to be introduced to improve Cadets' Data Science skills. Practical application of data science skills should be highlighted throughout the syllabus. Not every template has Data Science recommendations but please do add any you feel may have been missed.
Cadet Training & Modernisation Working Group	Ensure all outcomes are contextualised to help Cadets understand what they are learning in relation to what they will experience at sea.	While some outcomes are intrinsically linked to work carried out at sea, some need to be contextualised to show how they apply to work on board. Where this is the case, it is important to make sure Cadets clearly understand how the outcome relates to work at sea and it is essential to make sure that this context is given with reference to current and future seagoing technologies and practices.	Where outcomes do not specifically cover a topic which relates to work carried out at sea, more must be done to contextualise the outcome and make it relevant to the maritime industry, giving specific shipping examples of how the outcome may be applied in a modern shipping context. Not every template has contextualisation recommendations but please do add any you feel may have been missed.