SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY
TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT

TSC Category	Development and Implementation					
TSC Title	Control System Programming					
TSC Description	Develop capabilities in areas of communications and remote operations by programming logic circuits and erasable programmable read-only memory for ships, rigs and/or conversions					
TSC Proficiency Description	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Level 6**
		ICT-EPM-2036-1.1	**ICT-EPM-3036-1.1**	**ICT-EPM-4036-1.1**		
		Apply basic hardware programming techniques to build peripheral systems around the programmable logic controllers (PLC) and troubleshoot programming errors in the codes	Implement hardware programming techniques to enhance functionality of equipment and systems by using appropriate process parameter measuring devices and utilising their outputs to control operations	Develop programmable control systems by incorporating new technologies and linking them to operating principles of equipment and systems on-site and advise involved parties on programming techniques		
Knowledge		• Fundamental concepts of programming • Logic arguments in programming • Standard built-in functions and sub-routines	• Procedures for hardware programming in the areas of communication, remote operation and sensor capabilities • Basic principles of mechanical engineering • Principles of interaction between electronic and mechanical components • Best practices and industry innovations in the field of coding and programming • Types of communication and remote or autonomous operation sensors and feedback units	• Advanced principles of mechanical engineering • Advanced concepts of communication systems • Advanced principles of sensor technologies • Types of fully automatic, semi-automatic and manual control systems • Logic flow for implementation of systems for ships, rigs and/or conversions		

Abilities		• Apply object-oriented programming • Construct programmes with user-defined functions and sub-routines • Convert algorithms into programming codes	• Infer final mechanical effects of sensor programming • Identify potential hazards in using programmable sensors in lieu of manpower • Create contingency procedures for local and remote interventions	• Design control systems for a variety of applications • Review programming inputs and guide improvements • Conduct feasibility studies for new programmable equipment to ensure profitability • Predict aftersales support requirements		
Range of Application						