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| **SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – ASSOCIATE EMBEDDED SYSTEMS ENGINEER** | | | | | | |
| **Sector** | Infocomm Technology | | | | | |
| **Track** | Software and Applications | | | | | |
| **Sub-track** | Embedded Systems Engineering | | | | | |
| **Occupation** | Embedded Systems Engineer | | | | | |
| **Job Role** | **Associate Embedded Systems Engineer** | | | | | |
| **Job Role Description** | The Associate Embedded Systems Engineer performs software design, development and implementation of embedded systems in a product development environment. He/She programs embedded systems to perform specific tasks in real-time and within the device which it serves. He specifies and prototypes new products and solutions. He develops embedded systems testing and simulation tools aligned with security standards. He tests new products and documents results. He identifies systems issues, performs root cause analysis and develops solutions to increase embedded systems reverse engineering resilience. He migrates embedded software stack across platforms.  He works in a team setting and is familiar in programming languages required by the organisation. He is also knowledgeable of microprocessor and microcontroller based hardware components.  The Associate Embedded Systems Engineer is eager to learn and is keen to try his hand at developing, testing and implementing embedded systems prototypes, displaying curiosity and resilience when he encounters problems. He enjoys the camaraderie of a team environment and readily shares his views and ideas when working with others. | | | | | |
| **Critical Work Functions and Key Tasks** | **Critical Work Functions** | **Key Tasks** | | | | |
| **Identify business and user requirements** | Support discussions with stakeholders to understand business needs and user requirements | | | | |
| Support the conduct of requirements analysis | | | | |
| Support the formulation of specifications of embedded systems | | | | |
| Support proposal writing for embedded systems design | | | | |
| **Develop embedded systems software** | Contribute to the design, development and testing of embedded systems | | | | |
| Develop software modules in line with coding standard | | | | |
| Assist in tracking and peer code review | | | | |
| Assist in the evaluation and testing of hardware and software platforms | | | | |
| Obtain regular feedback from users | | | | |
| Evaluate embedded platforms under specific feature requirements | | | | |
| **Optimise embedded systems** | Collect user feedback and generate system report on embedded systems performance | | | | |
| Support development of new processes and tools to speed up the testing process | | | | |
| Integrate new features of the embedded systems | | | | |
| Identify ways to improve performance and robustness | | | | |
| Write technical guides for internal and external users | | | | |
| **Integrate software and hardware** | Migrate embedded systems software stack across platforms | | | | |
| Inspect test and assembly processes to ensure quality | | | | |
| Diagnose technical problems in embedded systems software | | | | |
| Troubleshoot performance bottlenecks in embedded systems software | | | | |
| Ensure embedded systems software meets performance and specifications | | | | |
| **Skills and Competencies** | **Technical Skills and Competencies** | | | **Generic Skills and Competencies** | | |
| Applications Development | | Level 3 | Computational Thinking | | Intermediate |
| Applications Integration | | Level 3 | Lifelong Learning | | Intermediate |
| Applications Support and Enhancement | | Level 1, Level 2 | Problem Solving | | Intermediate |
| Business Environment Analysis | | Level 2 | Communication | | Basic |
| Business Needs Analysis | | Level 2 | Teamwork | | Intermediate |
| Business Risk Management | | Level 3 |  | | |
| Configuration Tracking | | Level 1, Level 2 |
| Control System Programming | | Level 2 |
| Emerging Technology Synthesis | | Level 3 |
| Network Configuration | | Level 2, Level 3 |
| Project Management | | Level 3 |
| Software Configuration | | Level 2 |
| Software Design | | Level 3 |
| Software Testing | | Level 2 |
| Stakeholder Management | | Level 2 |
| System Integration | | Level 3 |
| Test Planning | | Level 2 |
| **Programme Listing** | For a list of Training Programmes available for the ICT sector, please visit: www.skillsfuture.sg/skills-framework/ict | | | | | |
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| The information contained in this document serves as a guide. | | | | | | |