



GEOSPATIAL ENGINEERING COMPETENCIES

Core Geospatial Competencies

| GECORE01 | | Competency | Project Specification and Brief | | | | |
|----------|------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | A | K | E | B |
| ITEM | TECHNICAL MEMBER | MEMBER | | | | | |
| A | All E | All B | 1. Analysis of client requirements 2. Development / interpretation of project specification/ brief 3. Agree and/or develop project deliverables 4. Define and/or recommend appropriate data standards | | | | |

GECORE01: Project Specification and Brief

| | |
|------------------------|-------------------|
| Name of Supervisor | Name of Applicant |
| Supervisor's signature | Date |

| GECORE02 | | Competency | Spatial Data | | | | |
|----------|-----------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | A | K | E | B |
| ITEM | TECHNICAL MEMBER | MEMBER | | | | | |
| A | 1 at E, 1 at K rest at A | 1 at B, 1 at E rest at A | Data Creation 1. Digitisation 2. Scanning 3. Surveying 4. GPS 5. Remote Sensing and Photogrammetry 6. Laser Scanning 7. Other - please specify: | | | | |
| B | 1 at B, 1 at E rest at K | 1 at B, 1 at E rest at K | Data Processing 1. Data formats 2. Extract, transform, load 3. Computation 4. Other - please specify: | | | | |
| C | 1 at E, rest at K | 2 at B, rest at K | Data representation 1. Vector 2. Raster 3. Textual 4. Paper | | | | |

| GECORE02 continued | | Competency | Spatial Data | | | | |
|--------------------|-------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | A | K | E | B |
| ITEM | TECHNICAL MEMBER | MEMBER | | | | | |
| D | 2 at E, rest at K | 2 at B, rest at K | Quality Control 1. Accuracy 2. Resolution 3. Precision 4. Appropriate on-going checking procedures 5. Problems of currency, source, and scale 6. Relationship of Scale to Accuracy 7. Other - please specify: | | | | |
| E | 1 at E, rest at K | 1 at E, rest at K | Data Management 1. Updates 2. Versioning 3. Archiving 4. Digital licences 5. Other - please specify: | | | | |
| F | 1 at E, rest at K | 1 at E, rest at K | Quality Assurance 1. Adhere to internal QMS procedures 2. Quality Management Systems ISO 9001 Certification 3. Environmental Management Systems ISO 14001 Certification 4. Other - please specify: | | | | |

GECORE02: Spatial Data

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|------------------------|-------------------|
| Name of Supervisor | Name of Applicant |
| Supervisor's signature | Date |

| GECORE03 | | Competency | Geospatial Data Referencing | | | | |
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| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | A | K | E | B |
| ITEM | TECHNICAL MEMBER | MEMBER | | | | | |
| A | 1 at E, rest at A | 1 at B, rest at K | Geo-referencing Systems 1. Geographic coordinate systems 2. Plane (rectilinear) coordinate systems 3. Linear referencing systems 4. Other - please specify: | | | | |
| B | 1 at E, rest at A | 1 at E, rest at K | Geodesy 1. Projections 2. Datums 3. Scale factors 4. Other - please specify: | | | | |
| C | 1 at E, rest at K | 2 at B | Transformations / data manipulation 1. Coordinate transformations 2. Interpolation 3. Other - please specify: | | | | |

| GECORE03 continued | | Competency | Geospatial Data Referencing | | | | |
|--------------------|-----------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | A | K | E | B |
| ITEM | TECHNICAL MEMBER | MEMBER | | | | | |
| D | 1 at E, 1 at K rest at A | 1 at B, 1 at E rest at K | Data Considerations 1. Data abstraction 2. Data classification 3. Data selection 4. Data generalisation 5. Other - please specify: | | | | |

GECORE03: Geospatial Data Referencing

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|------------------------|-------------------|
| Name of Supervisor | Name of Applicant |
| Supervisor's signature | Date |

| GECORE04 | | Competency | Cartography / Presentation | | | | |
|----------|--------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---|---|---|
| | | | | Date of assessment | | | |
| | Optimum Standard | | Activity Details | A | K | E | B |
| ITEM | TECHNICAL MEMBER | MEMBER | | | | | |
| A | E for 1, rest at K | E for 1, rest at K | 1. Cartography / Presentation 2. Fundamentals of design 3. Scale & generalisation 4. Colour, Typography, Symbology 5. Other - please specify: | | | | |

GECORE04: Cartography / Presentation

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|------------------------|-------------------|
| Name of Supervisor | Name of Applicant |
| Supervisor's signature | Date |

| GECORE05 | | Competency | ICT within Geospatial Engineering | | | | |
|----------|-------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | | | | |
| ITEM | TECHNICAL MEMBER | MEMBER | | A | K | E | B |
| A | 2 at E, rest at K | 2 at B, rest at K | 1. CAD 2. GIS 3. Hydrographic Modelling 4. 3D Design 5. Engineering Packages 6. Spreadsheets 7. Databases 8. Other - please specify: | | | | |

GECORE05: ICT within Geospatial Engineering

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|------------------------|-------------------|
| Name of Supervisor | Name of Applicant |
| Supervisor's signature | Date |

| GECORE06 | | Competency | Demonstrate an appreciation and general awareness of other geospatial engineering techniques | | | | |
|----------|------------------|------------|----------------------------------------------------------------------------------------------|---|---|---|---|
| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | A | K | E | B |
| ITEM | TECHNICAL MEMBER | MEMBER | | | | | |
| A | A | A | Land Surveying | | | | |
| B | A | A | Engineering Surveying | | | | |
| C | A | A | Hydrographic Surveying | | | | |
| D | A | A | Photogrammetry and Remote Sensing | | | | |
| E | A | A | Buried Services | | | | |
| F | A | A | Land and Engineering Surveying | | | | |
| G | A | A | Geographic Information Systems | | | | |
| H | A | A | Laser Scanning and processing of scanned data | | | | |

| GECORE06 continued | | Competency | Demonstrate an appreciation and general awareness of other geospatial engineering techniques | | | | |
|---------------------------|-------------------------|-------------------|-----------------------------------------------------------------------------------------------------|---|---|---|---|
| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | A | K | E | B |
| ITEM | TECHNICAL MEMBER | MEMBER | | | | | |
| I | A | A | Measured surveys of buildings | | | | |
| J | A | A | Machine control instrumentation | | | | |
| K | A | A | Other - please specify: | | | | |

GECORE06: Demonstrate an appreciation and general awareness of other geospatial engineering techniques

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|------------------------|-------------------|
| Name of Supervisor | Name of Applicant |
| Supervisor's signature | Date |

| GECORE07 | | Competency | Health and Safety | | | | |
|----------|------------------|------------|-----------------------------------------------------------------------|---|---|---|--|
| | | | Date of assessment | | | | |
| | Optimum Standard | | Activity Details | | | | |
| ITEM | TECHNICAL MEMBER | MEMBER | A | K | E | B | |
| A | All E | All B | Understand the Health and Safety consequence of spatial data accuracy | | | | |