

Senior Data Processor

S10 and S14

The following should be read and used in conjunction with the information pack 'Competence Assurance & Assessment: Introduction for Experienced Freelance Personnel'.

Evidence Required

- Competence appraisal:**
- ◆ at Senior Data Processor level
- Work records:**
- ◆ copy of a report written by the candidate that has been submitted to onshore management or the client. Possible examples: daily report or site memo.
 - ◆ copy of risk assessment documentation where the candidate has participated in risk assessment process
 - ◆ copy of data processing progress log sheet
 - ◆ copy of data processing quality control check sheet
- Witness testimonies:**
- ◆ one example of the candidate leading by example and demonstrating general safety awareness
 - ◆ one example of the candidate coaching junior personnel in a technical area
 - ◆ one example of the candidate's ability to process acquired survey data and present in appropriate format
- Essential knowledge:**
- ◆ written answers to Senior Data Processor questions
- Curriculum Vitae**
- ◆ Detailing offshore trips, work scope, clients, regions etc.

IMCA Framework Requirements

The competence assurance and assessment framework developed by IMCA (the International Marine Contractors Association) sets out a number of elements for each safety-critical position. The following table shows how competence can be demonstrated against each element.

Code	Demonstration	Covered by
S/S10/000/01 Safety Awareness	Demonstrate in-depth knowledge of company health, safety, environmental and quality procedures Ability to plan and perform risk assessments for all safety critical areas in a work environment Ability to perform "toolbox talk" meetings/briefings immediately prior to specific to specific survey operations Demonstrate a commitment to safety by setting an example on safety issues and demonstrating safety leadership to subordinates and work colleagues	CA (a) R, CA(c), Q12,14 CA (c), WT, Q3 CA (b), WT, Q2
S/S10/000/02 Emergency Procedures	Ability to take appropriate action in the event of an emergency situation Ability to produce coherent and concise reports on emergency situations	CA (a), WT, Q5 WT
S/S10/000/03 Behavioural Factors	Ability to explain and instruct subordinates in the use of equipment and systems Ability to take charge and show leadership qualities Ability to communicate effectively with client and company management, other team members and supervisor	CA (b), WT CA (d), Q5,6 CA (d), Q6
S/S10/000/04 IT Skills	Ability to accurately report and software faults and the context in which they are found to the appropriate support staff	R, CA (h), WT
S/S10/000/05 Seamanship	Ability to instruct personnel in the correct use of safety and survival equipment and aids Demonstrate a practical knowledge of vessel operations	CA (b), WT WT, Q8,9
S/S10/000/06 Prepare	Ability to prepare project specific procedures in accordance with client specification and project requirements	CA (e)

Code	Demonstration	Covered by
Project Procedures and Plans	Ability to understand and gather the necessary background information and data (work pack) to undertake the specified work, e.g. existing data, drawings and charts	CA (f), Q15
S/SI4/000/07 Data Acquisition	Demonstrate an understanding of the calibrations performed for all primary sensors used during standard surveys Demonstrate an understanding of the effect of sound velocity measurements on sub-surface positioning and data acquired Demonstrate an understanding of geodetic reference systems and projection parameters Ability to identify and implement the appropriate tidal reduction methods for survey tasks Ability to create tidal curves for reporting purposes	CA (e), Q10 CA (e) CA (f), (l) CA (g), Q11,16,17 CA (g), Q15
S/SI4/000/08 Data Processing	Ability to co-ordinate the successful mobilisation and testing of the processing suite Ability to plan a processing workflow to meet project requirements Ability to verify the results of automated processes Demonstrate an advanced understanding of sensor data and ability to determine quality of logged sensor data Ability to recognise data outliers and relate these anomalies to sensor limitations or problems Ability to effectively implement set processing procedures in a project environment Ability to monitor data processing activities against set procedures Ability to quality control check all processed data sets against acceptance criteria and project procedures Ability to cross check all processed data sets Ability to check all data sets against reported results Ability to quality control check completed processing quality records and log sheets	CA (d) CA (h) CA (i) CA (i), Q13 CA (i), Q13 CA (h) CA (i), WT R, CA (i), Q12,14 R, Q13 R, CA (i) R
S/SI4/000/09 Data Presentation	Ability to use standard CAD graphical import and export functions Ability to create, import and export text files Ability to use Cad measurement functions Ability to interpret client and industry electronic data format specifications and produce files that meet such data formats Demonstrate a knowledge of cartographic geodetic and datum parameters that must be included to meet project requirements Ability to design a multibox chart that meets client specification Ability to design a chart series that meets client specification Ability to co-ordinate the production of material for inclusion in a final survey report Demonstrate a knowledge of company reporting formats and methods Ability to maintain reporting quality control records	CA (j), WT CA (j), WT CA (j), WT CA (k), WT CA (l), WT CA (m), WT CA (m), WT CA (n) CA (n) R
S/SI4/000/10 Data Management	Ability to monitor data management activities against set procedures Ability to manage project electronic back up and archive systems Ability to manage project analogue/hard copy filing and archive systems	CA (o) CA (o) CA (o)
S/SI4/000/11 Survey Principles	Demonstrate an understanding of the spatial relationship between standard survey sensors and the impact these relationships have on data acquisition planning	CA (p), Q8,9

Q Question (written answer required)

CA Competence Appraisal Form

R Record of work; document or product

WT Witness Testimony

Sample Achievement Record

Candidate name:

First assessor name:

	Assessment Decision	Approval of Internal Verifier/ Competence Focal Point
Safety		
Emergency Procedures		
Behavioural Factors		
IT Skills		
Seamanship		
Prepare Project Procedures and Plans		
Data Acquisition		
Data Processing		
Data Presentation		
Data Management		
Survey Principles		

Comments:

First assessor signature: Date:

Verifier signature: Date:

Sample Competence Appraisal

The appraiser must have observed the appraisee completing the task before completing the relevant section. Where necessary a number of different appraisers may be used to complete the form fully.

Appraisee name:

Task	Feedback to Appraisee	Appraiser (Print name, sign and date)
<p>a) Lead by example and coach other personnel in general safety awareness.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>b) Lead risk assessment teams and chair toolbox talks for operational tasks.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>c) Maintain effective teamwork and communication, including the supervision of a shift.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>d) Mobilise and fully test an offline data processing system, including networking PC's.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>e) Understand the importance of sound velocity data and how it can affect both positioning and bathymetric systems.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>f) Understand geodesy, reference systems and projection parameters.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		

Task	Feedback to Appraisee	Appraiser (Print name, sign and date)
<p>g) Identify and implement the appropriate tidal reduction method for survey and create tidal curves for reporting purposes.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>h) Demonstrate a detailed working knowledge of data processing methods, algorithms and data flow.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>i) Implement and monitor a data QC system including the QC of all types of survey data and charts.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>j) Demonstrate the use of advanced CAD functions for the production of survey charts and online survey graphics files.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>k) Interpret client and industry electronic data formats specifications and produce files in such formats.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>l) Demonstrate knowledge of cartographic geodetic & datum parameters that must be included to meet project requirements.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>m) Use advanced cartographic techniques to design multi-box charts and chart series that meet client specifications.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		

Task	Feedback to Appraisee	Appraiser <i>(Print name, sign and date)</i>
<p>n) Co-ordinate the production of material for inclusion in final reports, plus understand company report formats.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>o) Set up and run data management system for both electronic & hard copy data, plus data back-up and archiving.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>p) Demonstrate knowledge of survey principles and how they are used in planning surveys.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>Projects</p> <p>Indicate which Projects you have participated in during the last 12 months. Specify project workscope</p>		
<p>Projects</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>	<p>N.B. Feedback should be based on projects detailed above</p>	
<p>Hardware/Software</p> <p>Indicate which Hardware/Software you have used during the last 12 months</p>		
<p>Hardware/Software</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>	<p>N.B. Feedback should be based on software / hardware detailed above</p>	

Appraisee comments:

Appraisee signature:

.....

Date:

.....

Essential Knowledge – Sample Questionnaire

- 1 What criteria must be considered before deciding to conduct a formal risk assessment?
.....
.....
.....
- 2 If a shift team member approached you with a safety concern how would you respond and follow-up?
.....
.....
.....
- 3 What are the objectives/aims of a toolbox talk and how as the chairman of the talk can you ensure that the objectives/ aims have been met?
.....
.....
.....
- 4 What are the definitions of hazard and risk? What steps are required to be taken to complete a risk assessment and how are risks evaluated?
.....
.....
.....
- 5 If a member of your shift team is feeling physically un-well what actions would you take?
.....
.....
.....
- 6 If a member of your shift team is acting out of character or is un-communicative what actions would you take?
.....
.....
.....
- 7 How can you best discover the limitations and abilities of a trainee on your shift?
.....
.....
.....
- 8 What is the need for a common reference point on a vehicle?
.....
.....
.....

9 What is the standard sign convention used in the offshore industry for measuring offsets?

.....
.....
.....

10 What are the fundamental calibrations to be conducted prior to any offshore survey work commencing and explain the methodology for each and derived corrections?

.....
.....
.....

11 Explain the difference between using predicted and observed tides and how these affect data acquisition, processing speeds and quality of data.

.....
.....
.....

12 If there is a 1km section in a 20km data base where the transverse profiles had not been edited properly, what is the best way to proceed in order to correct the problem?

.....
.....
.....

13 When looking at the latest section of data currently being surveyed, you notice that there is no bathymetric data. What steps would you recommend and in what order?

.....
.....
.....

14 What is the purpose of the quality control (QC) process, which is applied to all data and reports?

.....
.....
.....

15 What is the usual source of reference for tidal information?

.....
.....
.....

16 Explain the main elements required to correctly calculate tidal values for a given work area.

.....
.....
.....

17 On a long route survey (e.g. 100nm) how would you reduce depths for tidal variation when given one standard port to work from?

.....
.....
.....