Introduction to SEG's Competency Management System (CMS)

Introduction
SEG is making a Competency Management System (CMS) available to its members to help them manage their professional careers and technical development. The CMS is quite versatile in that it not only offers the capability to perform a self-assessment, but also:

• Identifies the competency gaps relative to a job’s responsibilities
• Identifies learning resources to close the gaps, and
• Provides the user a way to develop and track a self-paced learning plan

By using the system to identify competency gaps, SEG members have a tool to help them proactively manage their professional development.

The system was built over a number of years by pooling rich and diverse experiences of many geophysicists working in the oil and gas industry, and is being used in various forms by many companies in different parts of the world.

Getting the maximum benefit from CMS
Users should read the following information before using the CMS to understand the tool’s input, output, and to get the maximum benefit.

The user will start by selecting an appropriate geophysics-related job title (i.e., by selecting a title that resembles closely the job he or she is currently doing). The CMS supports a four-step process.

Step 1: Perform a Self-Assessment
Step 2: Identify and prioritize gaps
Step 3: Build a Learning Plan to close appropriate gaps
Step 4: Develop appropriate competencies, apply them and reassess as needed

Once Step 1 is completed, the model provides an Assessment Results report, which displays gaps in those skills where the user’s response to the competency level statements is at a level lower than that recommended for the specific job requirements.
Please note that most users will discover that they have ‘gaps’ after completing their self-assessment regardless of their years of experience in the job for a variety of reasons. All the jobs in the CMS have been defined very broadly. SEG created the job descriptions acknowledging that there are significant variations in the job titles and scopes across the industry.

Users should be aware that if they were to superimpose their own job description on the job description included in the CMS for their role, it might not align perfectly. Even for areas where the roles match exactly, there may be gaps if there are deficiencies in the user’s skills, or the user is new to the job type.

With the gaps identified in Step 2 in the assessment, the user needs to carefully analyze the gaps and select those that are most pertinent to his or her current situation. Next comes prioritization of the shortened gap list based on the impact of addressing them in the short, medium and long term.

In Step 3 of the system, the user is required to build a Learning Plan based on:

1. Selecting the courses or other resources recommended by the system
2. Understanding the types of actions needed to address prioritized gaps
3. Developing a schedule and reviewing it with appropriate coaches and supervisors
The system will provide choices in terms of resources available to address gaps. The CMS can keep a record of the training the user has completed, and the user can repeat assessments at various points in the plan. The system offers a good opportunity for SEG members to manage their technical and professional development.

Step 4 is the actual training and application of knowledge gained to close gaps:

1. Track your training schedule
2. Add supporting documents and evidence of competence
3. Reassess

The CMS can also be used by SEG members in conjunction with other internal or external geophysics competency assessment systems.
Part One: Specific questions about the SEG Competency Management System

What is the purpose of the SEG Competency Management System?
SEG is making this Competency Management System available to its members to help them manage their professional and technical development and in the process help the industry accelerate geophysical competency development.

What does the CMS do?
The CMS is quite versatile in that it not only offers the capability to perform a self-assessment, but also: a) defines the gaps relative to a job description in the model, b) identifies learning resources to bridge the gaps, and c) provides the user with a flexibility to develop and track a self-paced learning plan.

How was the system developed?
The system was built over a number of years by experienced people working in the exploration and production sector of the oil and gas industry. The software upon which the system is built is used by various companies in different parts of the world.

Are my results kept confidential?
Yes, your personal results will not be shared with anyone. Only the SEG Administrator has access to assessments and that is only to monitor the system over time looking for ways to improve the system and the user experience. Aggregated data will be shared with SEG’s Continuing Education Committee periodically to assess value and benefit of the system.

Should I expect my assessment results to show skill and knowledge “gaps”? 
Most users of the system will discover that they have ‘gaps’ when they go to Step 2, regardless of their job or the years of experience in the job. This may be disturbing to some people, especially those who have many years of experience in their job. However, a gap in an assessment does not mean that the users are not good at their job, nor does it mean that the system has failed. To understand why the system may show a gap, please refer to the question and answer provided below.

Why might I have a “gap”?
All the jobs in the CMS have been defined very broadly; covering as many aspects of the role as the designers thought the job should appropriately cover. Based on this information the users should be able to see that if they were to superimpose their own job description on the job description included in the CMS for their role, it would not align perfectly. To the extent that the user is doing only a part of the role defined in the CMS, the remainder that they are not doing, will show as a gap. If there are deficiencies in the user’s skills, there may be gaps even if the roles match exactly, especially if the user has been recently transferred into a new job.
What criteria should I use to decide whether I meet a specific point in an assessment statement for a given level?
Ask yourself, “At this point in time, do I have the awareness, skill, knowledge, and/or experience necessary to do this task as described?”

Can I assess myself against more than one Job Type/Description?
Yes, you can assess yourself as many times as you like. You do not have to complete an assessment to start a new one, but if you do not submit a current assessment and start a new one, you will lose the current one. If you complete and submit an assessment and then start a new one, the last assessment will go into your assessment history report, which provides details of all the assessments you have completed.

How do you know the job level requirements (JLRs) were set accurately?
The JLRs were initially proposed by experienced competency specialists and then reviewed and vetted by a panel of subject matter experts with extensive industry experience.

Will I see my assessment results immediately?
Yes. Your results – showing your assessment scores versus the job level requirement – will be available immediately after you press the “Submit” button.

What types of training are identified, and how can they be undertaken?
Learning plans will refer users to SEG training resources, including e-learning, along with some generic training actions from external providers. The learning plan also identifies other resources such as SEG technical papers, books, e-learning and actions related to on-the-job tasks. In developing a learning plan, the user will be able to prioritize the competency gaps, select the most appropriate learning resources for each gap that they choose to work on, and determine the pace at which learning should take place.

How might I use the results of my assessment and Learning Plan?
The system is primarily for your own use, to aid in steering your technical and professional development using the self-assessment and learning plan results. However you may want to share the results of the assessment with your supervisor and enlist their help and guidance in selecting competencies to work on and learning resources to use. You might also include the results in your portfolio to show during a job interview, or during a job- or company-related performance or career development evaluation, especially if you have entered relevant evidence to support your self-assessment.

How can I or my employer get help building learning plans and actions with me or other geophysicists in my company who have assessment results?
The SEG, through its Continuing Education Committee, can provide experienced training and development consultants who can advise appropriate training courses (including some not in the SEG resource catalog) and very importantly on project task-based applied training.

Does SEG want my feedback on my use of the CMS?
Yes, because at the end of the day, any system is only as good as its users find it to be – taking the time to provide feedback to SEG is the best way to make sure the SEG CMS is the best it can be and to help SEG better serve its members.

**Part Two: General questions about competence and competency management**

**How does an “assessment” differ from a “performance appraisal”?**
An assessment determines whether an individual possesses the skills and knowledge required to perform a job to a required standard, and highlights specific training and development needs. A performance appraisal is a review of an individual's actual job performance during a specific time period.

**What is “competence”?**
The combination of awareness, knowledge, skills and attitude that an individual must demonstrate in order to meet the performance standards required of his or her job.

**What is a “competency model (CM)”?**
An aggregation of competency units – the set of tasks and responsibilities that a jobholder is required to know and have the skills to perform in order to be considered competent in a particular job. A model is typically grouped into five areas: Organizational Core, Functional Core, Support, Location Specific, and Behavioral and Soft Skills.

The SEG CMS is virtually all technical in nature. The ten job types in the current system are:

- Acquisition Research and Development Geophysicist
- General Geophysicist
- Non-Seismic Geophysicist
- Engineering Geophysicist
- Environmental Geophysicist
- Processing/Imaging Research and Development Geophysicist
- Quantitative Seismic Interpreter
- Seismic Acquisition Geophysicist
- Seismic Interpreter
- Seismic Processing/Imaging Geophysicist

**What is a “competency unit (CU)”?**
A series of statements covering a specific topic. It is a basic description and a series of statements covering a specific topic. The CU topics describe specific technical skills or knowledge related to the CU. Each CU contains a general statement and a series of specific statements arranged in three levels of proficiency – starting with Awareness (Level 1), moving to Knowledge (Level 2), and then to Skilled Application (Level 3).

**What is a “job level requirement (JLR)”?**
A numerical indicator of the expected level of competence of an employee in carrying out a specified task: Awareness (Level 1), Knowledge (Level 2), Skilled Application (Level 3). There are currently only these 3 levels in the system at time of release. However, we anticipate adding Advanced (Level 4) as SEG gains experience in the management and application of the CMS.
What is a “learning plan”?

A learning plan provides examples of potential training needed to fill prioritized gaps between the user’s competency level and competency level required of the position, including the training type and expected time required. Learning plans are composed of individual training events that have been matched to the CU in each competency model.