Knowledge, Skills, and Abilities Project (KSAs)
What are the KSAs?

- Published in June 2001
- 12 positions were developed: OIM, Toolpusher, Driller Assistant, Driller, Electrician, Mechanic, Motorman, Crane Operator, Derrickman, Floorman, Roustabout, HSE
- List of minimum knowledge, skills, and abilities required to perform the job
- Available on the IADC web site
## Current KSA Format

### Example KSA
**HEALTH, SAFETY AND ENVIRONMENT (HSE)**

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills/Ability</th>
<th>Performance Measurement</th>
</tr>
</thead>
</table>
| **1. Health and Safety Environmental Policies and Procedures** | **Explains:**  
  * company health and safety policies and procedures  
  * appropriate actions to be taken to comply with company health and safety policy and procedure  
  * proper waste management procedures  

**Maintains:**  
* good housekeeping practices for work area  
* personnel hygiene in accordance with company policy and procedure  

**Actively Participates In:**  
* all applicable safety meetings | **Performance Measurement**  
1. Observed by supervisor to display an adequate knowledge of company policies and procedures. |
|                                | **Performance Measurement**  
2. Observed by supervisor to promote good housekeeping and personal hygiene. | |
|                                | **Performance Measurement**  
3. Has attended and participated in all safety meetings to date. | |
| **2. Knowledge of Safety in the Workplace** | **Understands and Explains:**  
  * company health and safety policies and procedures  
  * company permit procedures  
  * proper reporting procedures for HSE incidents  
  * company requirements for working at heights  
  * company requirements for working over water  

**Identifies:**  
* potential hazards in the workplace  

**Actively Participates In:**  
* safety meetings | **Performance Measurement**  
1. Observed by supervisor to understand and explain company policies for safety at the workplace. |
|                                | **Performance Measurement**  
2. Observed by supervisor to be able to understand and identify workplace hazards. | |
|                                | **Performance Measurement**  
3. Has attended and participated in all safety meetings to date. | |
KSA Project Overview

The Knowledge, Skills, and Abilities (KSA) project is IADC’s major drilling industry project to develop enhanced competency guidelines for virtually all rig-based positions that can be sorted based on rig type, environment, geographic region, and equipment.
KSA Project Rationale

- Responds to both regulator and industry call for a globally accepted, recommended, and commonly used competence standard.

- Fulfills the need for industry-developed and accepted guidelines for assessing competence and evaluating performance for all rig-based positions.

- Part of an effort to address the looming talent crisis and increased staffing requirements.

- KSAs seen as a crucial step in developing workforce capabilities.
Phase 1 (complete)

- World Mapping exercise, which included in- and out-of-industry models
- Global survey of the industry, trade organizations, and regulatory bodies
- Review of survey results for best practice, templates, and implementation models
- Defining of competencies for each position identified
Phase 1 (complete)

Establishment of project workgroups that include:

- Quality, Health, Safety, and Environment
- Offshore Drilling Operations
- Onshore Drilling Operations
- Subsea Operations
- Marine Operations
- Technical Maintenance
- Process and Procedures
Phase 2 & 3

- Workgroup mapping of elements to positions and to database filters (in progress)
- Construction and beta testing of relational database for delivering on-demand, unique KSAs by position (in progress)
- Development of wiki page for continuous improvement
- Development of recommended acceptable ranges of performance for each competence
Phase 2 & 3

- Development of resource and reference libraries
- Recommendations for a variety of assessment methods for use in a competence assurance program
- Identification of additional rig-based support positions such as Mud Logger and Mud Engineer; development of KSAs for the additional positions using the same template and process
### Workgroup Data Organizer

#### Units of Competency - Core and Additional

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<th>Workgroup Data Organizer</th>
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<tr>
<td><strong>Disaster System inclus</strong></td>
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<tr>
<td><strong>upper flex joint</strong></td>
</tr>
<tr>
<td><strong>Marine Riser System</strong></td>
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<tr>
<td><strong>Annually TYPE PREVENTERS</strong></td>
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<tr>
<td><strong>Subsea BOP Stock</strong></td>
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#### Elements of Competency (Knowledge, Demonstration [Skill and Ability])

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#### Positions (C - Core; A - Additional)

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### Additional Notes

- *Core and Additional competencies are included within the document.*
- *Detailed descriptions and requirements for each position are provided.*

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*Please consult the full document for comprehensive details.*
KSA Database

IADC KSA Definitions

Please select your position, platform, and equipment to generate your KSA definition:

Select Your Position:
Driller

Select Your Location:
Offshore

Select Your Rig Type:
Drillship

Answer the following questions about your platform:
Type of Drillship:
- Moored
- Shallow Water
- Deepwater

Select Applicable Equipment:
- Crane
- Standard
- Knuckleboom
- Brake
- Joy Stick
- Standard

Generate KSAs
KSA Database

Confirm Your Selections

Position: Driller
Location: Offshore
Rig Type: Drillship
  - Deepwater
Equipment:
  - Crane (Knuckleboom)
  - Brake (Joy Stick)

Generate KSAs
The following is the standard IADC competency listing based on the position of Driller (Deepwater).

Each Knowledge Item (KSA) identifies the core competencies and additional competencies available for the KSA.

Click 'Customize Competencies' to add/remove competency items.

***Customizing competencies will result in a non-IADC standard form.

Click 'Print KSA' to print the recommended competency listing as indicated.

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills/Ability</th>
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<tr>
<td>1. DRILLING OPERATIONS</td>
<td>CORE COMPETENCIES (14):</td>
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<tr>
<td>14 core competencies</td>
<td>- Demonstrate how to recognize early-stage mechanical problems with the rotary drill equipment.</td>
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<tr>
<td>13 additional competencies</td>
<td>- Provide examples of minor mechanical repairs made with little to no supervision.</td>
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<td></td>
<td>- Show how to set alarms properly, such as PVT, flowrates, and gas alarms.</td>
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<td>- Demonstrate how to recognize fluctuation of pump pressures and how to determine their possible causes.</td>
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<td>- Demonstrate proper care of tool joints, to include tool joint cleaning, proper selection and use of pipe dope, recognize tool joint face and thread damage.</td>
</tr>
<tr>
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<td>- Describe the torque limits of all tubulars in the hole.</td>
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<td>- Demonstrate knowledge of the proper makeup torques for all tool joints on board.</td>
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<td>- Show how to manage drill floor housekeeping to ensure a clean, tidy and hazard-free work area.</td>
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<td>- Show how to operate and interpret the driller's console controls and instrument panel, including all rotary drilling equipment.</td>
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<td>- Explain and show the riser running procedures on your rig.</td>
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<td>- Show how to complete the IADC Daily Drilling Report or electronic drilling report.</td>
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<td>- Prepares handover notes for relief drilling staff.</td>
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**KSA Database**

Customizing competencies will result in a non-IADC standard form.

Click 'Print KSA' to print the selected competency listing.

### Knowledge

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### Core Competencies (14):

- Demonstrate how to recognize early-stage mechanical problems with the rotary drill equipment.
- Provide examples of minor mechanical repairs made with little to no supervision.
- Show how to set alarms properly, such as PVT, flowrates, and gas alarms.
- Demonstrate how to recognize fluctuation of pump pressures and how to determine their possible causes.
- Demonstrate proper care of tool joints, to include tool joint cleaning, proper selection and use of pipe dope, recognize tool joint face and thread damage.
- Describe the torque limits of all tubulars in the hole.
- Demonstrate knowledge of the proper makeup torques for all tool joints on board.
- Show how to manage drill floor housekeeping to ensure a clean, tidy and hazard-free work area.
- Show how to operate and interpret the driller's console controls and instrument panel, including all rotary drilling equipment.
- Explain and show the riser running procedures on your rig.
- Show how to complete the IADC Daily Drilling Report or electronic drilling report.
- Prepares handover notes for relief drilling staff.
- Record Pipe Tallies.
- Demonstrate the ability to maintain accurate records of tubular and tool dimensions (i.e. ID, OD, pipe tallies, fish neck and serial numbers).

### Additional Competencies (13):

- Demonstrate an advanced level of mechanical knowledge of rotary drill equipment: travelling blocks, drawworks, top drive, rotary table, etc.
- Demonstrate how to assist the Maintenance department in diagnosing equipment problems.
- Demonstrate an advanced knowledge of mud circulating systems.
- Demonstrate knowledge of the limitations of shaker and mud cleaning systems.
- Demonstrate an advanced knowledge of Drillstring Failure Prevention and Recognition, in particular.
- Demonstrate knowledge of how to recognize drillstring washouts.
For information regarding IADC’s initiatives, contact:

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