Baker Hughes

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**Performance Review**

| | |
|---|---|
| Family name: | Abundis Mosqueda |
| First name: | Leonardo Samuel |
| Date of birth: | November 13, 1996 |
| Type of Assignment: | Internship and Bachelor Thesis |
| Department: | Products and Technology, Drilling Services |
| Assignment period: | March 25, 2019 - October 24, 2019 |
| Days absent: | zero |

Baker Hughes is the world's first and only fullstream provider of integrated oilfield products, services and digital solutions. Drawing on a storied heritage of invention, Baker Hughes harnesses the passion and experience of its people to enhance productivity across the oil and gas value chain. With operations in over 120 countries, and about 1.600 employees in Celle, the company's global scale, local know-how and commitment to service infuse over a century of experience with the spirit of a startup – inventing smarter ways to bring energy to the world.

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**Project description / main tasks / activities**

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| Leonardo Abundis Mosqueda's task was to develop a functional 3D demonstration model of the downhole tool "steering unit". This contained all stages of the development, starting with the concept phase, where different solutions have been developed, documented, evaluated and the best fitting one identified. For the identified solution, Mr. Abundis Mosqueda created a requirements document and a project plan, with the dates of dedicated milestones. The design, implementation and test phases comprise mechanics, electronics, embedded software and PC software. The mechanics parts have been developed with Solid Works and afterwards 3D printed. The prototype electronics uses a breadboard with the ESP8266 controller and MPU9250 sensors with 3-axis accelerometer and 3-axis magnetometer. The embedded software has been developed with the Arduino IDE in C programming language, the PC software has been implemented as a html webpage. The communication from the tool to the PC has been established using WiFi and Websockets. All created artifacts have been stored in a revision control system. |

**Evaluation**

| **criteria for evaluation** | **significantly exceeds** | **exceeds expectations** | **meets expectations** | **partially meets expectations** | **does not meet expectations** |
|---|---|---|---|---|---|
| **Professional Expertise** | | | | | |
| • has the necessary expertise / the necessary basics | X | | | | |
| • is professionally interested and open-minded about the tasks | X | | | | |
| • recognizes relationships and is able to process information quickly | | X | | | |
| **Working Method** | | | | | |
| • fulfills his/her tasks reliably | | X | | | |
| • works focused and thorough | | X | | | |
| • works quickly and committed | | X | | | |
| • works independently in an appropriate way | X | | | | |

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**Cooperation**

| | | | | | |
|---|---|---|---|---|---|
| • integrates himself/herself into the team | | | X | | |
| • contributes ideas and suggestions | | X | | | |
| • taking on suggestions from others | | X | | | |

**Social Skill**

| | | | | | |
|---|---|---|---|---|---|
| • seems open-minded | | X | | | |
| • expresses him/herself clearly and concisely | | | X | | |

**Result**

| | | | | | |
|---|---|---|---|---|---|
| • implementation of the target | | | X | | |
| • usability of the results | | | X | | |

| | | | | | |
|---|---|---|---|---|---|
| **Overall evaluation** | | X | | | |

**Particular strengths/ other comments**

Mr. Abundis Mosqueda got very quick into the topic and gathered a deep knowledge. He is open minded and interested in all engineering directions, like mechanics, electronics, embedded and PC software.

Celle, October 24, 2019 / RG

**Baker Hughes INTEQ GmbH**

i.A.

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HR Manager

Ingo Roders
Project Manager Engineering