

Internship Presentation:

Schlumberger

Alaa Ahmed Bashir

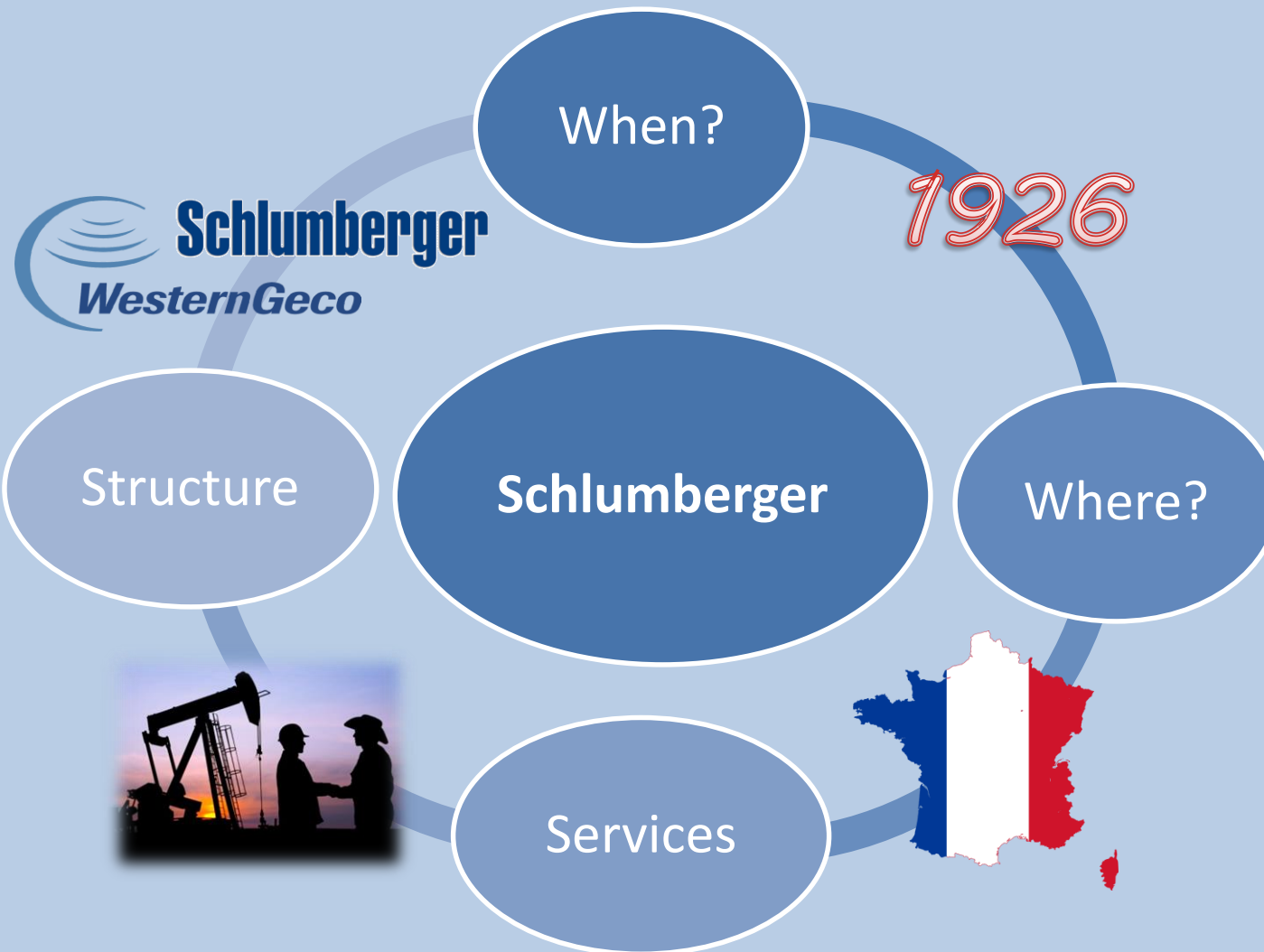
201150368

Executive Summary

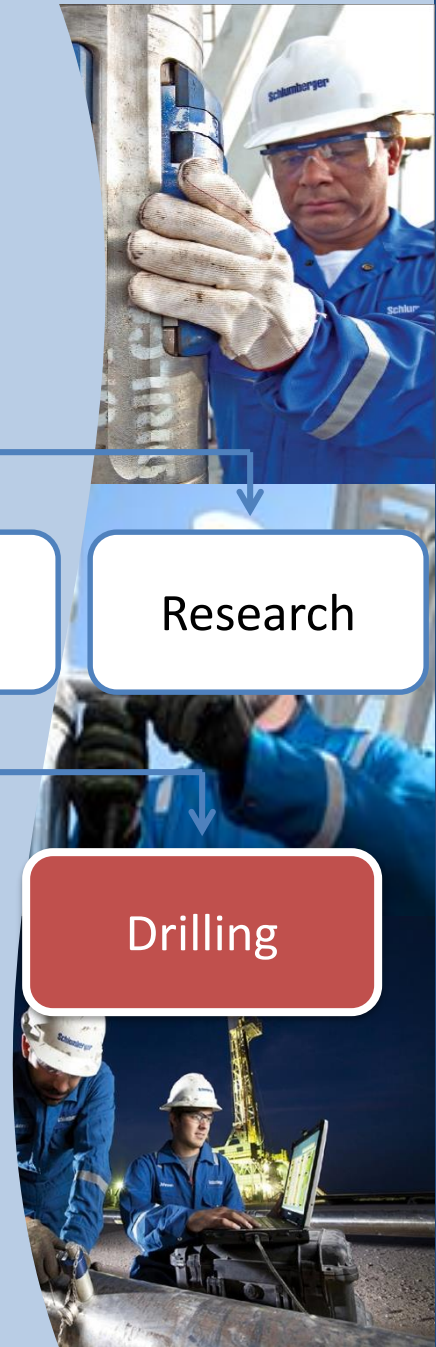
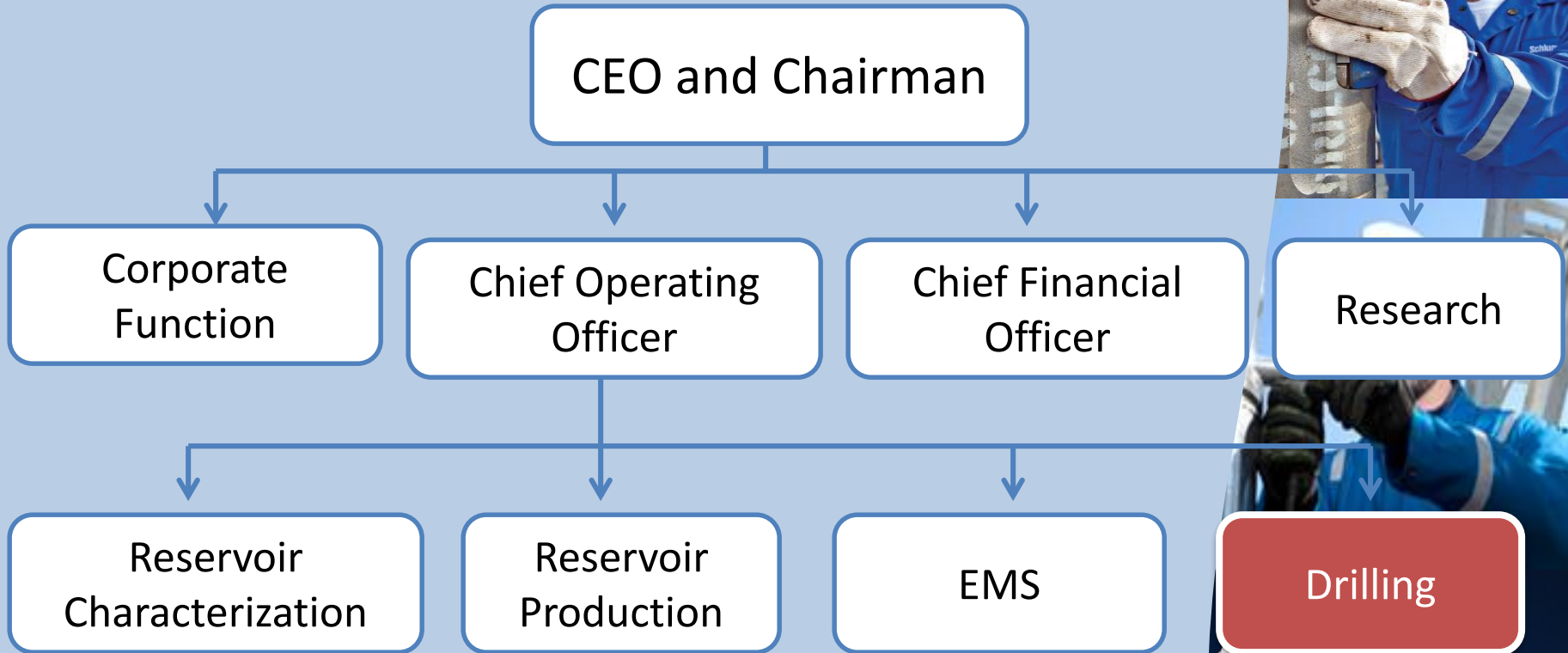
- Schlumberger's Background
- Tasks and Assignments in:
 - Measuring while Drilling (MWD)
 - Surface System
 - Rotary Steerable System (RSS)
 - Motors
 - Logging while Drilling (LWD)
- Graduation Project Proposal



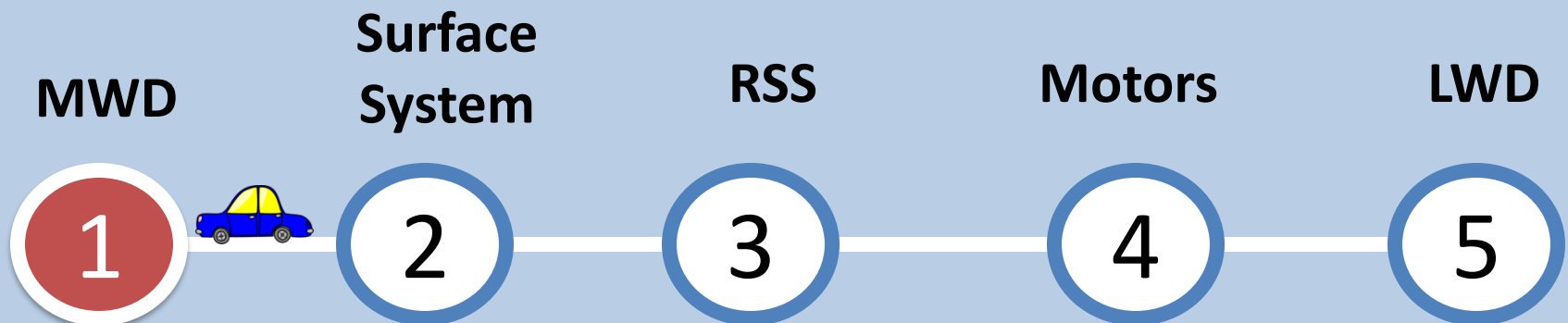
Schlumberger's Background



Schlumberger's Structure



Tasks and Assignments

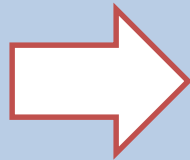


Measuring While Drilling (MWD)

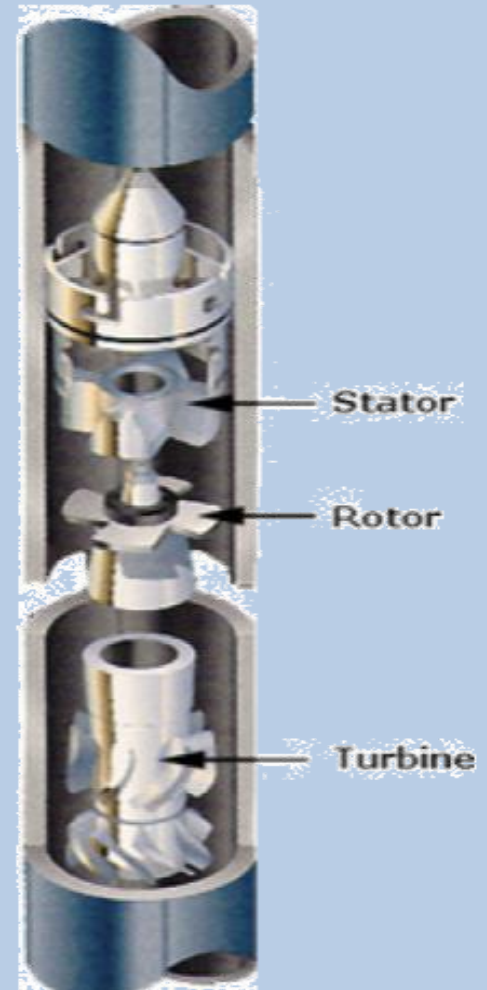
Purpose of MWD tools:

1 Generate power

Mud Flow from
the surface



Through the
turbine stator
and rotor



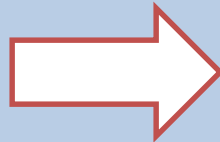
Measuring While Drilling (MWD)

Purpose of MWD tools:

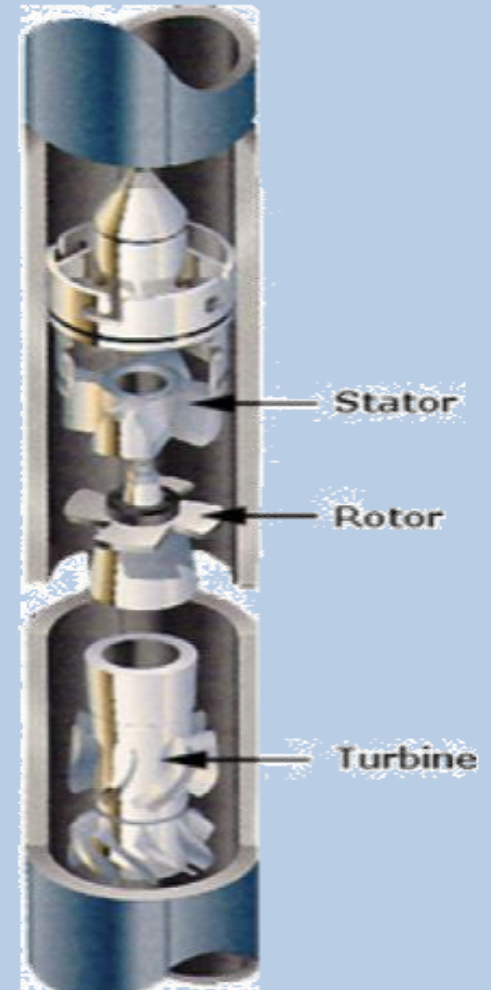
2

Telemetry

Downhole



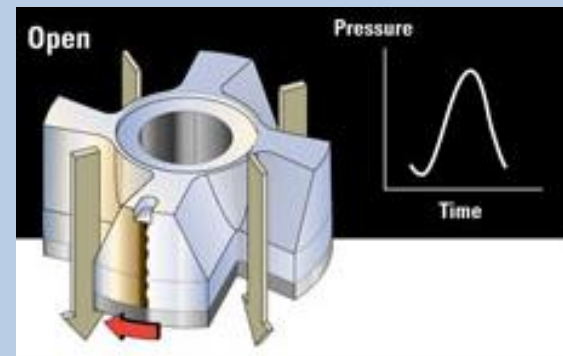
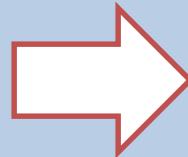
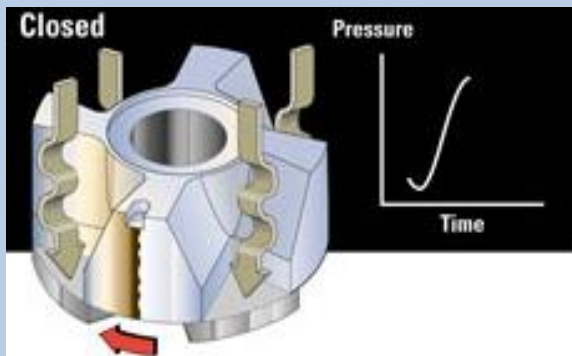
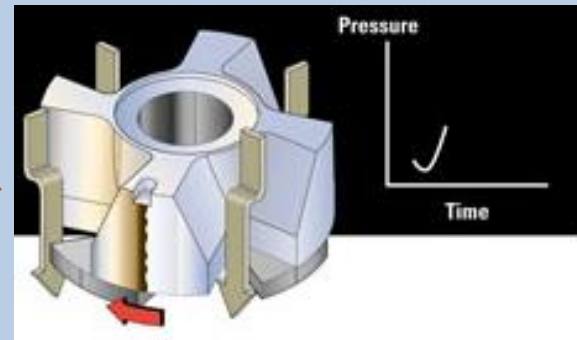
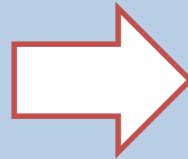
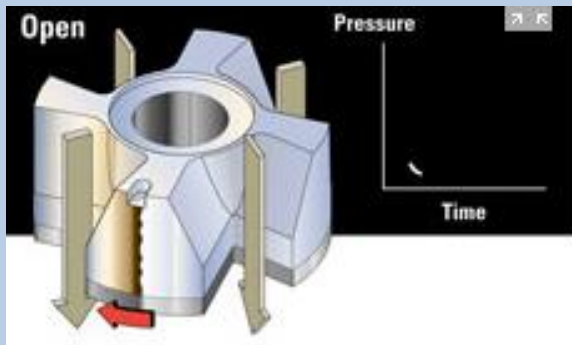
Surface
Computer



Measuring While Drilling (MWD)

Purpose of MWD tools:

2 Telemetry



Measuring While Drilling (MWD)

MWD tools:

1

Telescope

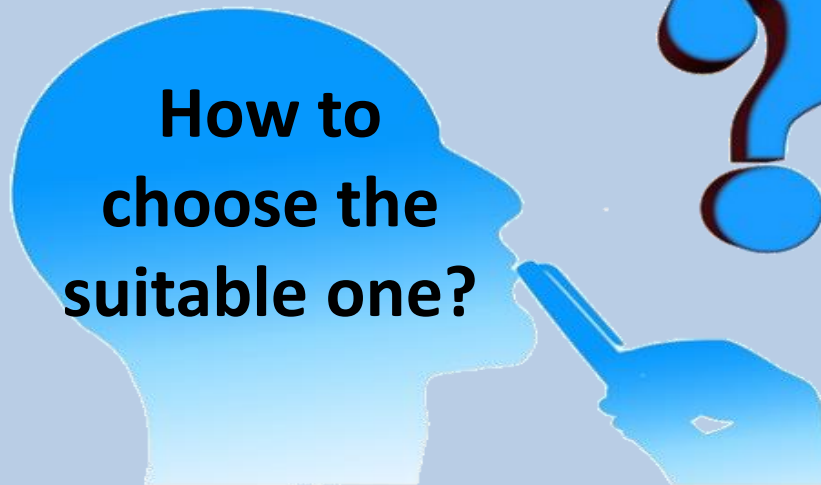
2

Impulse

3

Slimpulse

How to
choose the
suitable one?



Measuring While Drilling (MWD)

Tasks and Assignments:

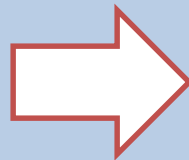
1

Assembling and disassembling the turbine and modulator

2

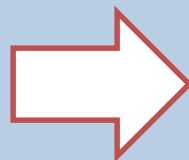
Adjusting the size of the gap between the rotor and stator

Factors



Flow rate, Depth and Mud type

Importance



Control the signal strength

Measuring While Drilling (MWD)

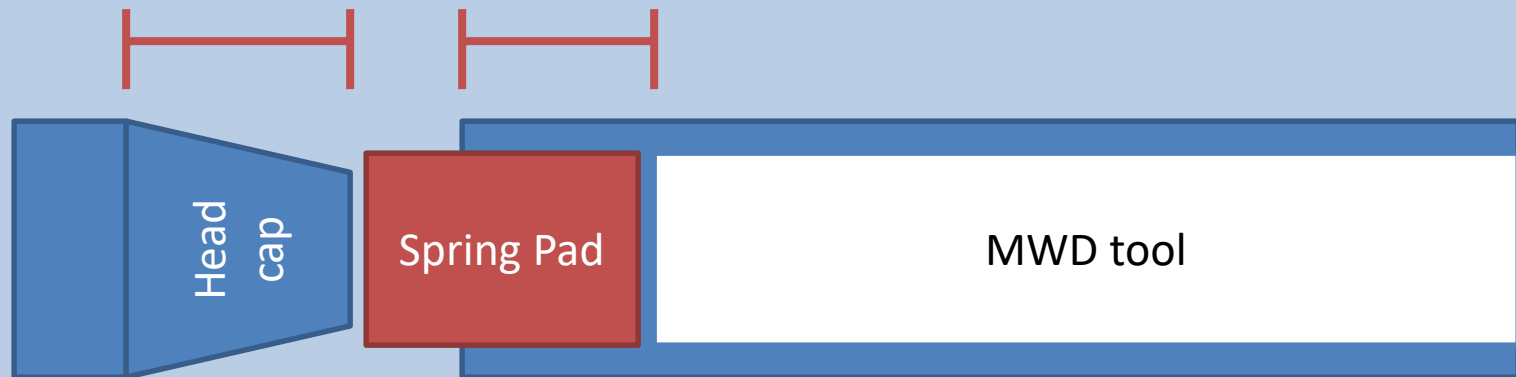
Tasks and Assignments:

3

Inspecting the collars

4

Setting the suitable length of the spring pad

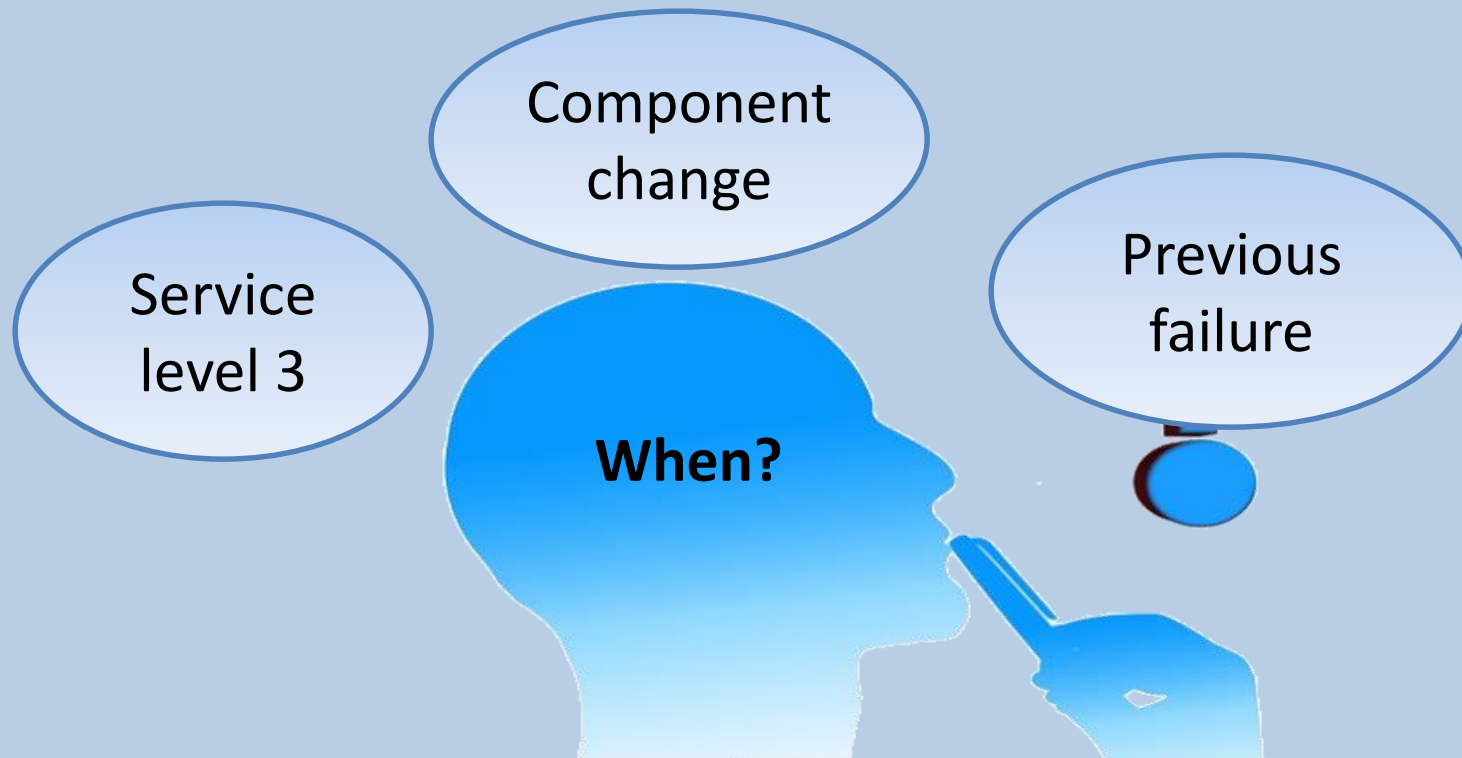


Measuring While Drilling (MWD)

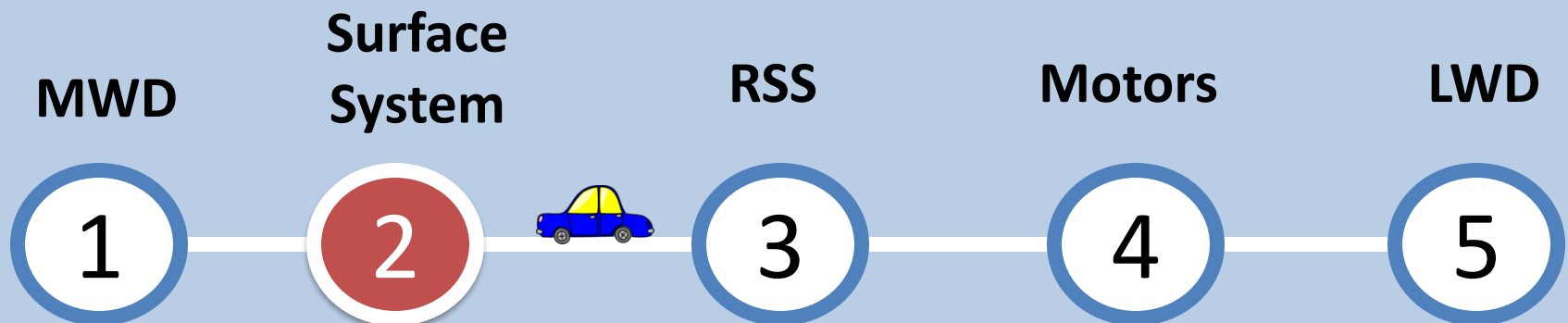
Tasks and Assignments:

5

Performing heat test



Tasks and Assignments



Surface System:

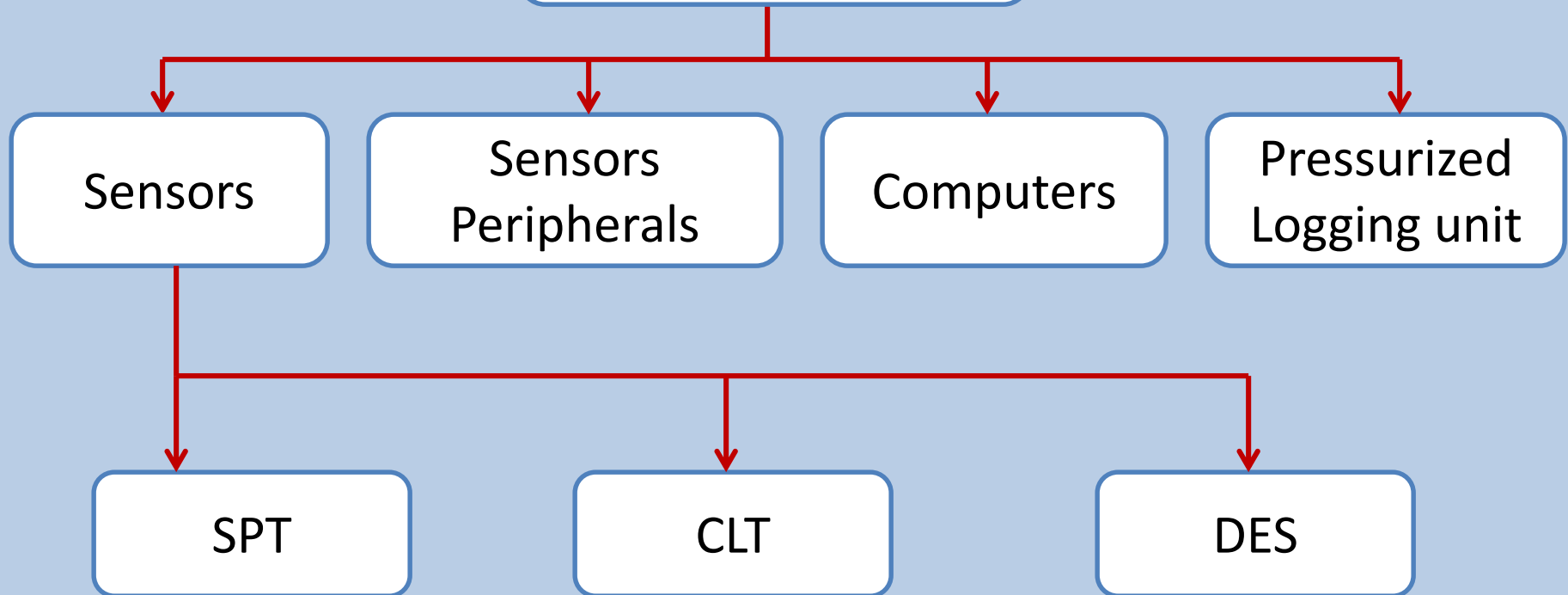
- **What is surface system?**

Group of components that can be moved from rig to another.

- **What is the purpose of surface system?**

Collect and process data about the drilling parameters

Surface System



Surface System

Tasks and Assignments:

Preparing the Logging Unit

Cleaning



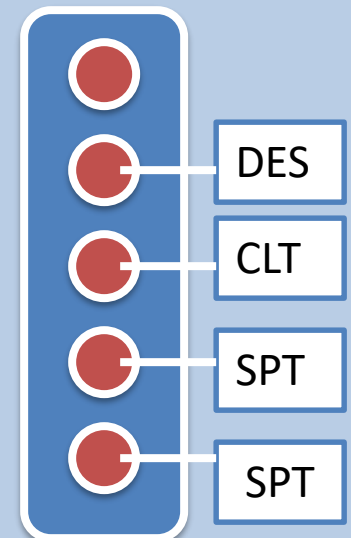
Checking the equipments



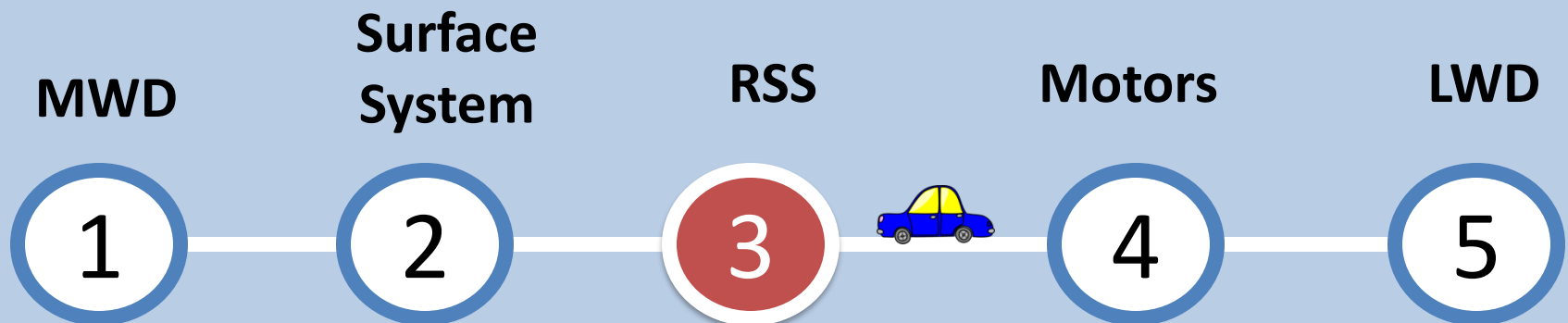
Taking Photos



Checking the sensors

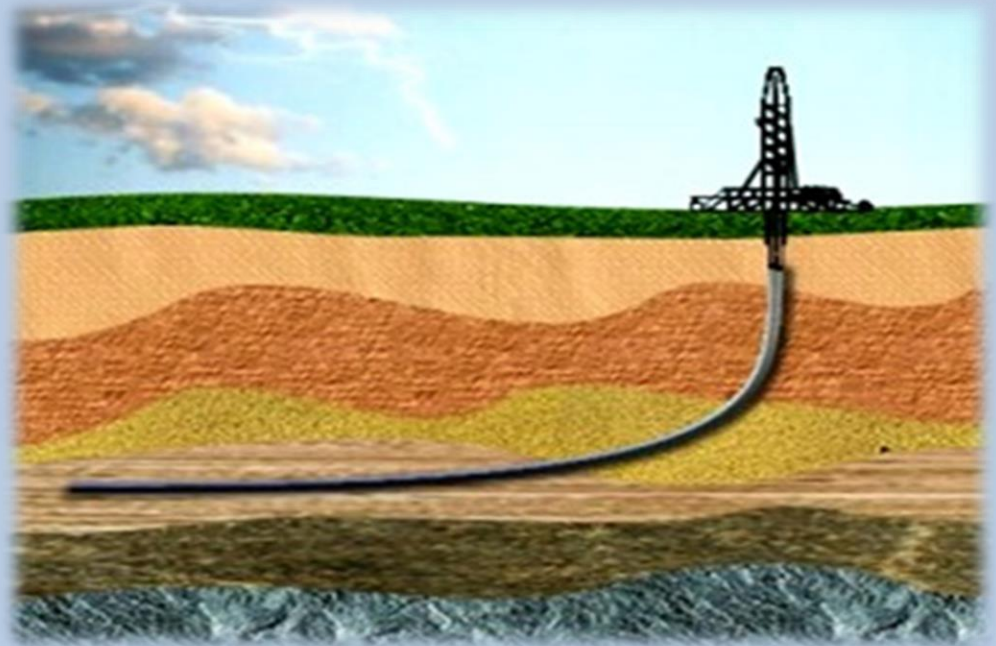


Tasks and Assignments



Rotary Steerable System (RSS):

- ❑ Directional drilling technology
- ❑ Controlled by fluctuating the mud pressure (Down-linking)
- ❑ Has 2 steering system:
 - Push the Bit
 - Point the Bit



Rotary Steerable System (RSS):

RSS tools:

1

PowerDrive



2

Xceed

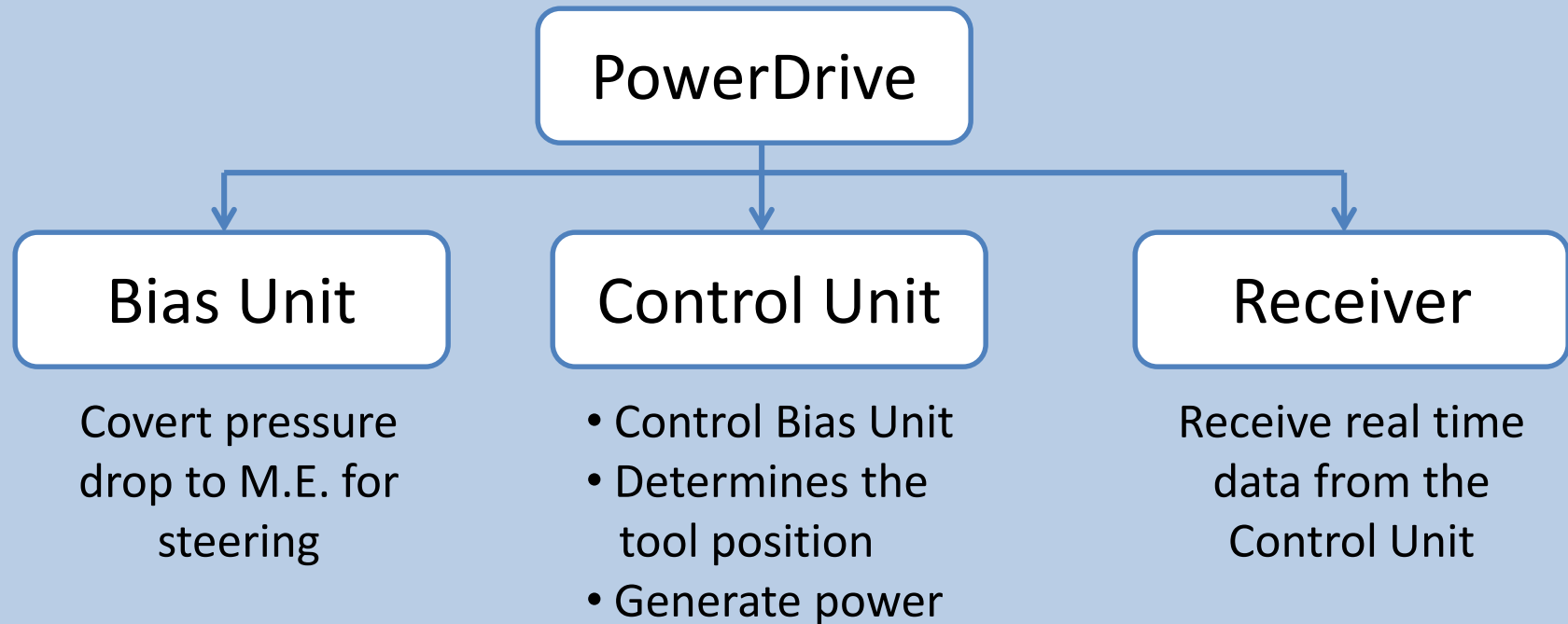


3

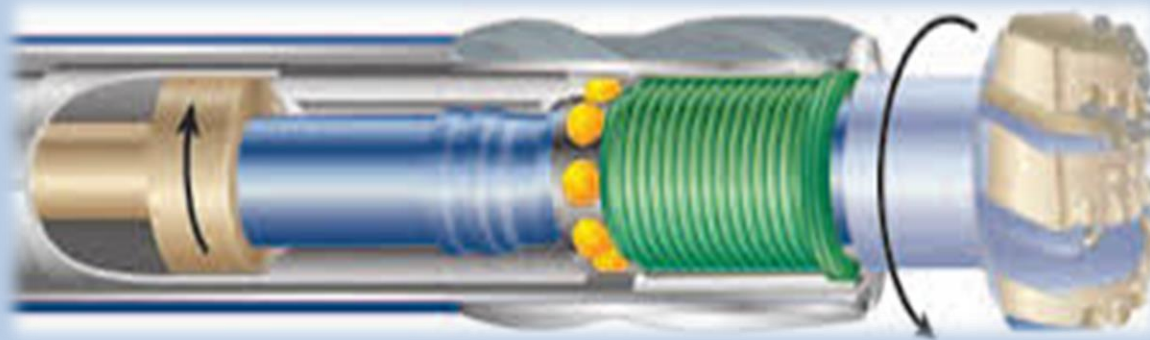
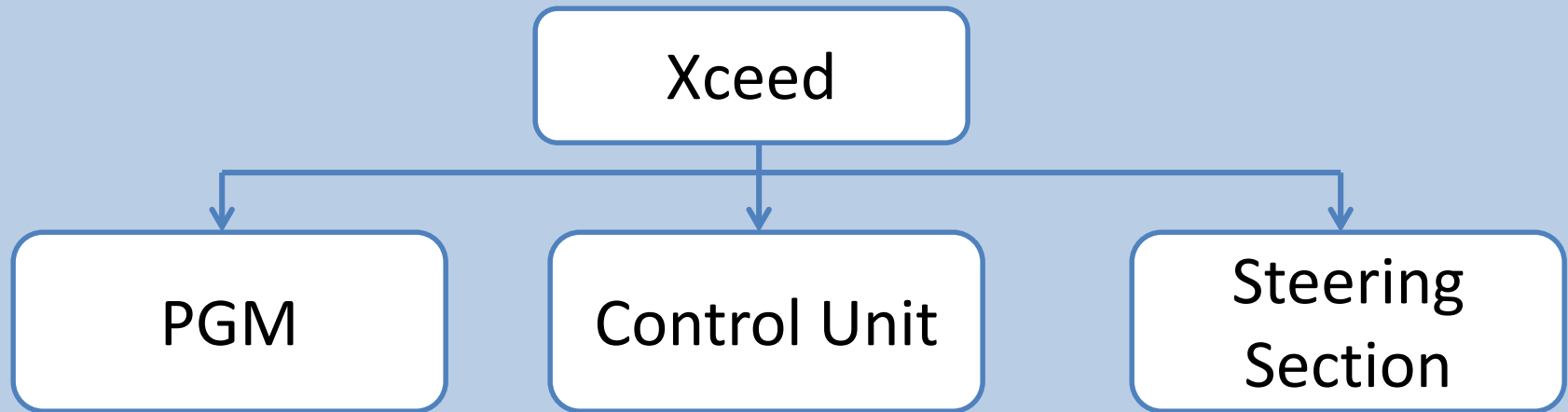
Archer



Rotary Steerable System (RSS):



Rotary Steerable System (RSS):

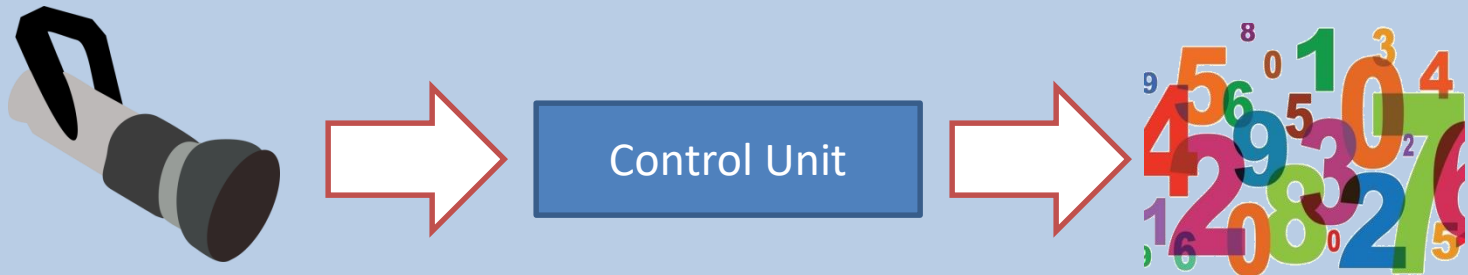


Rotary Steerable System (RSS):

Tasks and Assignments:

1

Perform Flow loop test for the PowerDrive's control unit



2

Checking the function-ability of the Bias Unit

Rotary Steerable System (RSS):

Tasks and Assignments:

3

Disassembling the pad assembly



4

Vacuuming the PGM

Rotary Steerable System (RSS):

Tasks and Assignments:

5

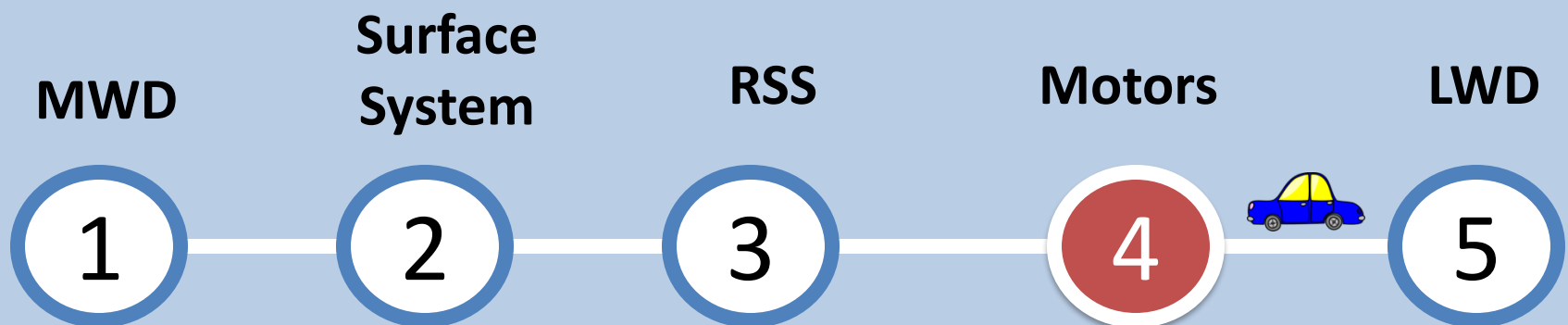
Performing the continuity test for the pressure compensator



6

Performing the isolation test for the pressure compensator

Tasks and Assignments



Drilling Motors

Directional
Drilling

Performance
Drilling



Upper C-link



Lower C-link

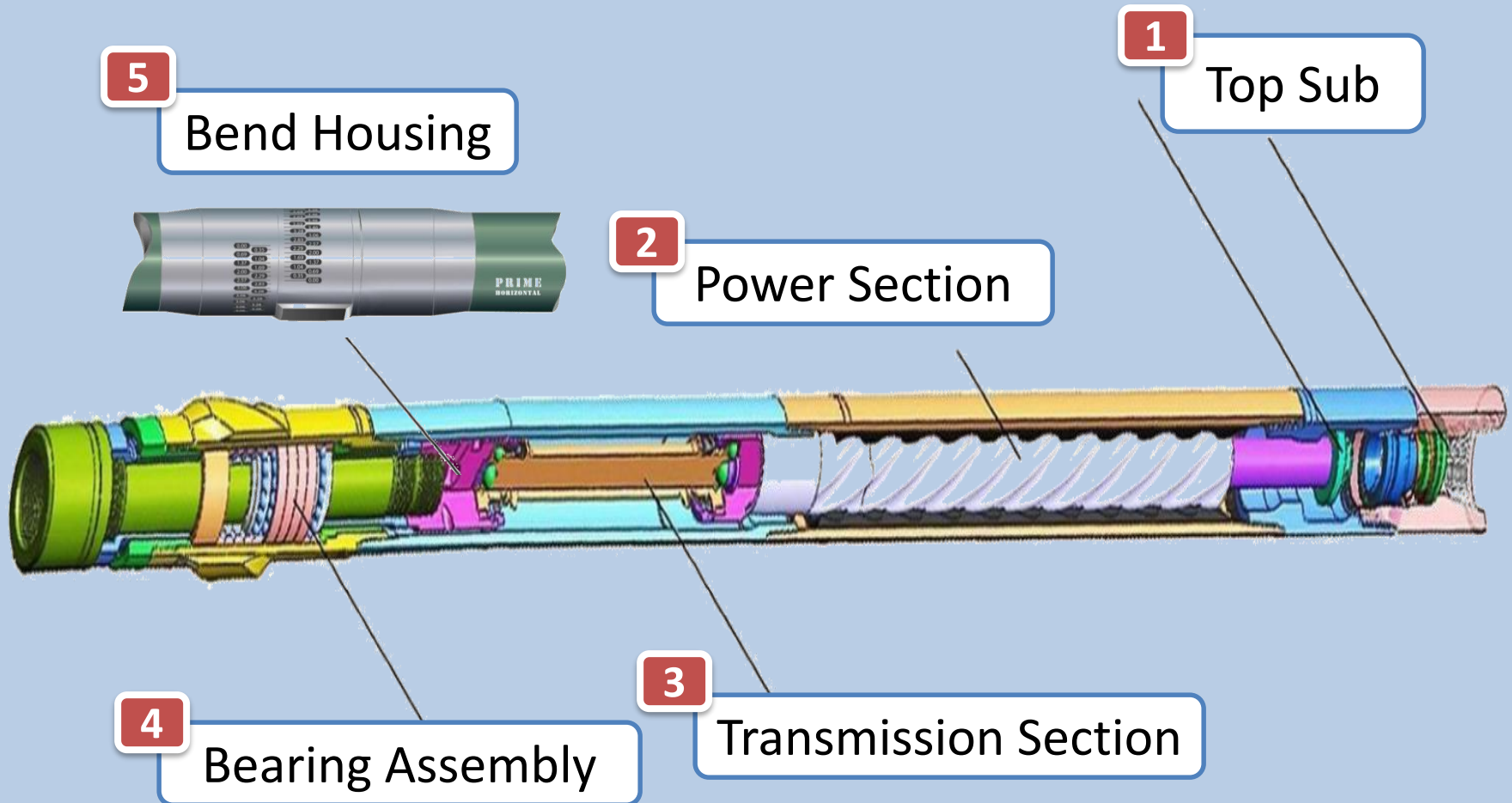
MWD

Motor

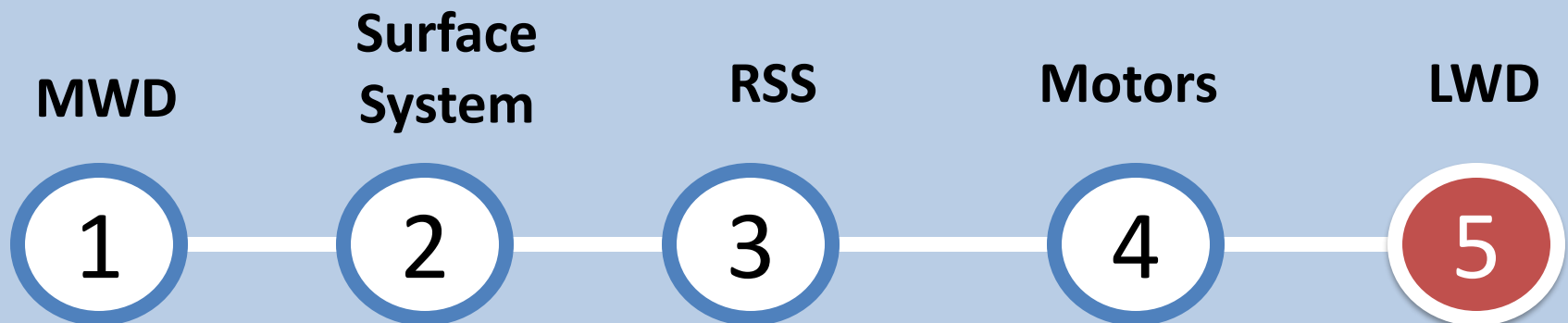
PowerDrive

Drilling Motors

Motor Components:



Tasks and Assignments



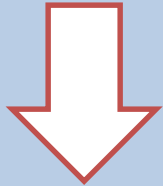
Logging while Drilling (LWD)

❑ LWD Definition:

Taking measurements of the petro-physical properties while drilling

❑ LWD Services:

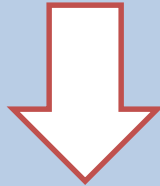
Gamma Ray
Measurement



Type of rock



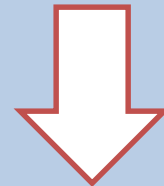
Resistivity
Measurement



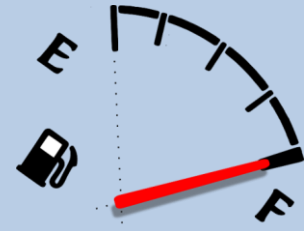
Type of fluid



Porosity
Measurement



Potential
Payzone



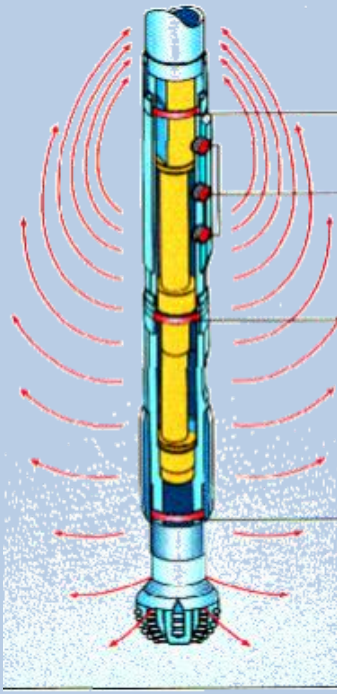
Logging while Drilling (LWD)

LWD Tools:

AdnVISION

ArcVISION

EcoScope



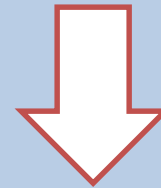
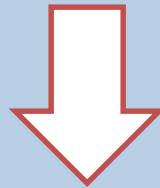
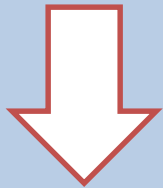
Logging while Drilling (LWD)

LWD Components:

Chassis

Jamnet

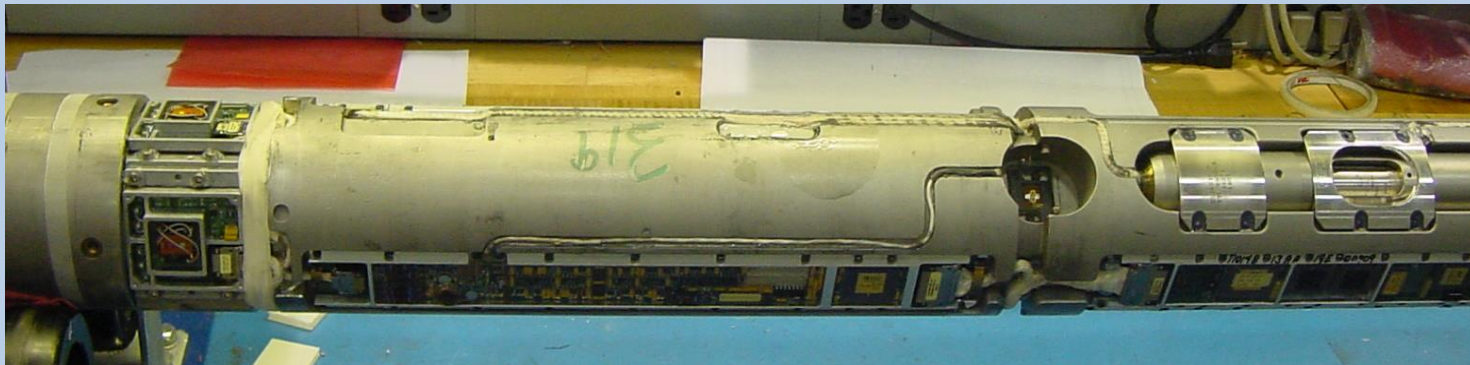
Lithium Battery



Electronics

Prevent Sliding

Power

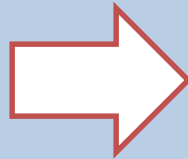
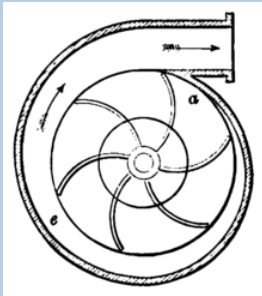


Logging while Drilling (LWD)

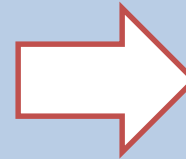
Tasks and Assignments:

1

Performing the Vacuum test



LWD tool



2

Participating in loading and un-loading the chassis/battery/jamnet inside the collar

Logging while Drilling (LWD)

Tasks and Assignments:

3

Maintaining the lithium battery and jamnet

4

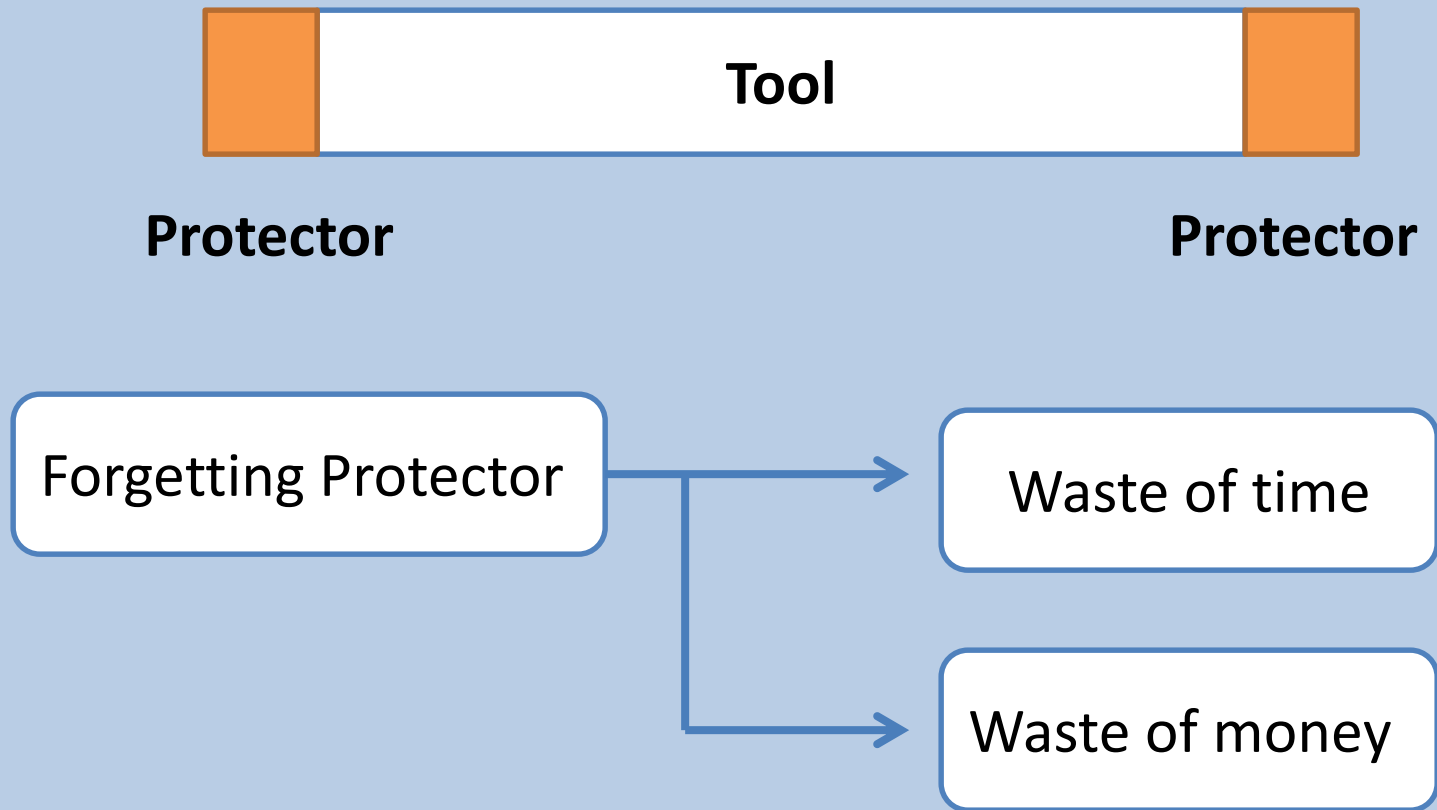
Changing the o-rings of antenna's plugs

5

Assembling and disassembling SonicScope transmitters and receivers

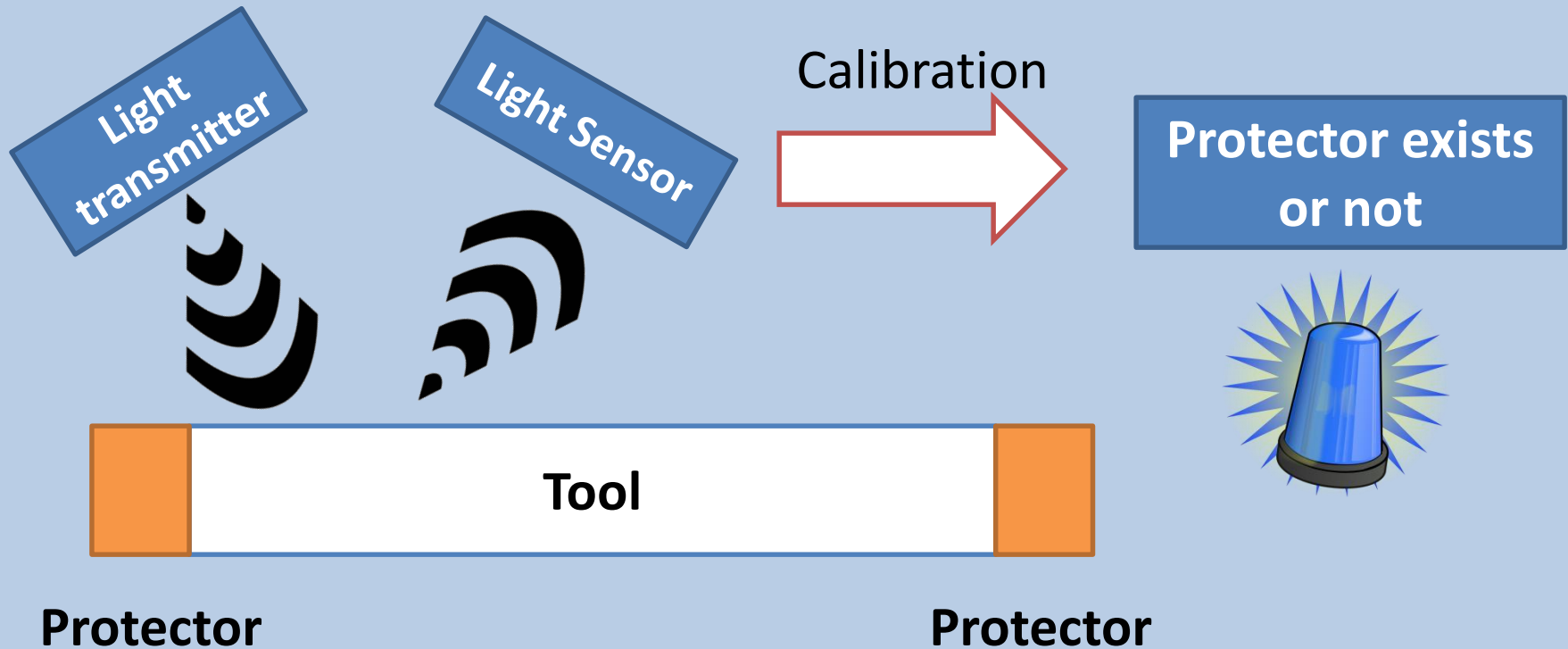
Graduation Project Proposal

1 Identify a need



Graduation Project Proposal

2 Find a solution



The image features a light blue background with a dark blue border. In the center, the words "THANK YOU FOR LISTENING" are written in a bold, white, sans-serif font. The text is set against a semi-transparent grey rectangular background. Above the text, the word "THANK" is spelled out using dark brown M&M's candies. Below the text, the words "YOU FOR LISTENING" are spelled out using blue M&M's candies. The candies are arranged in a way that they appear to be standing on their edges, casting soft shadows on the surface below them.

THANK YOU FOR LISTENING