

SPE DSA-TS Comms Team

Meeting Minutes – Drill-a-Stand Use Case Team

Date: 8-Feb-2013

Minutes

Led by Marty Cavanaugh. Big thanks on his efforts to get this done!

Reviewed overall set of steps, no big concerns.

Reviewed four first steps to get ready for drilling:

- Initialize
- Begin Pumping
- Take Survey (optional)
- Begin Rotation

Initialize Use Case

- Need to get system into a state
- Could check Rig State
- System should check as many things as necessary to assure DaS is ok to start
 - o Are sub-systems even available
 - o Pumps off, rotation off, not on bottom, HD < BD - stand length, etc.
- Drill verifies DaS parameters
- Driller should start by saying start
 - o May need to have verification of begin/end for each step as we “learn”
- DaS should not offer question to “Start?” until system ok to start. Driller can start DaS app, but what is preventing starting the DaS procedure should be advised to Driller.

Begin pumping:

- How many pumps are we going to use
- Target rate
- Procedure to start pump may vary by company.
 - o Target flowrate and methodology for achieving flow rate.
 - o Do we want external system (DaS) to do this or we want Rig Controller to handle pump ramping.
 - o We can specify that DaS will do the ramping.
 - o Look at pump config and liner size to see what flow rate would be (need contextual data describing pumps. Feed this into algorithm which computes from a desired flow rate the pump SPM needed.

Attendees:

Marty Cavanaugh, Shell
Fred Florence, NOV
Clinton Chapman, Schlumberger
Nils Sandsmark, POSC Cesar
Bill Johnson, NOV
Hari Koduru, Energistincs
Dmitriy Dashevskiy, BHI
Ken Bever, MIMOSA
Andrew Li, Schlumberger
Pradeep Anniyappa, Canrig
Paul Hunkar, OPC Foundation
representative

- o Methodology of startup can be selected by Driller as an initialization parameter for DaS. DaS Default method or Company X method.
 - o FF likes approach of asking for a flow level and letting rig or DaS sub-system take care of pumps to use, stroke rates, etc. to achieve it.
 - o Would require more contextual data for algorithm to function properly.
- We should monitor response to ramp up to assure pressures are behaving as expected. Look for flow out
- Should see SPM on pumps as an indication that procedure is moving.
- FlowIn parameter would be useful (if available)
- FlowOut should happen (flow paddle, not likely to have annulus pressure)
- Monitor pressures to avoid pop-off valve issues (implies more contextual data needed (pop-off valve limits))
- Tank levels should be known to assure we can pump at all.
- Maximum time to wait for flow-out is needed (alarm if not achieved)
- Stabilized pumping:
 - o SPMs are constant
 - o SPPA, Flow OUT is stable
 - o Need to record stabilized SPPA in order to get diff.pressure later.
 - o Need to have something which indicates stable, and determine what the inputs are to determine that

Survey (Optional)

- Need to establish comms with MWD.

Is this needed?

- Could be a question to the driller to assure survey has occurred. This may be automatically answered in the future.

Rotating

Initial condition: TD On, TD Brake Off

Need: Target RPM and Ramp Rate to achieve Drillstring free

- Monitor RPM and torque
- TD will have max Torque as well to stop breaking top drive.
- Gear should be known, it may be handled by TD Object to select correct Gear for RPM/Torque.
- We will assume that TD is present, no kelly/rotary table used.
- Ends with stable.

Action items:

1. NS/KB to send out UC Form again.
2. BJ will attempt to put Begin Pumps into UC form on form for next meeting.
3. CC will send out SPE number(s) for Rig State papers