

## SELVA Meeting 06/03/2014

Attendees: Jerzy Nogiec, Lidija Kokoska, Sergey Kotelnikov, Andrzej Makulski, Roger Nehring, Fred Nobrega, Jim Rife, Dana Walbridge

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### • Project Status

- Our critical path is to have all the motors functional, FPGA modified and validated, the PID controllers tuned, and then motor synchronization working.  
The current status:
  - X (bridge) – working
  - X1 (bridge) – working only in one direction (driver malfunction)
  - Z, U, V (mandrel) – to be tested after disassembling the mandrel
  - Y (boom) – tested with a signal from Datel
  - B (reel u/d)- tested with a signal from Datel
  - S (tension) - tested with a signal from Datel: moving, but very weak
- The load cells: calibrated; now waiting for the winch to prepare for tuning and testing of the tension PID.
- Rework of the safety systems (redundancy, failsafe): partially done, to be continued next weekend.

### • Meeting Topics

- 1) Action items from the previous week
- 2) Status of the bridge motor tests
- 3) Status of the traffic lights troubleshooting
- 4) Preparations for the tension subsystem tests
- 5) Status of the reel motor test
- 6) Status of the work on failsafe operation and redundancy in safety systems.
- 7) Installation of the bridge on its tracks: procedure, alignment
- 8) Preparations of the mandrel for the work on the motors: mechanically decoupling the motors, alignment of the mandrel
- 9) Safety bumper switches: sensitivity, status
- 10) Documentation
- 11) Requisitions: drivers, bumper collision sensors
- 12) Safety, ideas, comments, etc. (all)

### • Safety

- Everybody please use PPE
- Everybody will read and sign the Hazard Analysis.

### • Problems

- Faulty motor drivers need to be replaced (requisitions being placed)

- The ground connection from the transformer to the drivers was missing resulting in asymmetrical voltages- fixed.
- There is a couple of I/O channels whose purpose is yet to be determined.

## • Action Items

### Jim Rife, Rick Smith, etc.

Remove the mandrel support bar from the mandrel motion subsystem in order to test the motors. Lidija will observe and record how it is done so that T&I technicians can do it in the future.	To be done this afternoon (June 3).	6/3/2014
Lower the Bridge to the tracks/rails.	To be done after motors are running correctly and other testing, most likely sometime next week.	6/3/2014

### Fred Nobrega

Supply a functional specifications document	The first draft has been done.	Continue 5/27/2014
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### Fred Lewis

Repair the existing damaged encoder	Not done	5/20/2014
Install safety system improvements this weekend if panel is complete	Started this past weekend. Should be completed this coming weekend	Continue 5/27/2014
Ensure we have replacement encoders for future use	Will try to order a universal encoder	5/27/2014
Order motor drivers		6/2/2014

### Lidija

Implement mechanical setup for tension testing	Winch should be here this week	Continue 5/6/2014
Create fixture for tension calibration fixed load, needed this week	First tests done for now, and have data we need now. Tests will continue later.	5/27/2014
Load cells calibration note		6/3/2014

### Andrzej

Set up a DC motor for tuning tension PID	Postponed, pending solution for mechanical setup for tension	4/22/2014
Test X and X1 motors; produce test	In progress; motor X works, motor X1	Continue

	results note. Sergey will assist	works in only one direction.	5/20/2014
	Test the mandrel motors		6/3/2014
	Test the boom motor		6/2/2014
	Try to lower the driver voltage to provide stable operation conditions.	Inserting 10 diodes to lower the voltage.	6/3/2014

### Jerzy

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### Roger

	Execute and document tension control test plan	Documentation is complete, execution suspended on mechanical work	Suspended 4/22/2014
	Review Dana's translation of Reel Up/Down Test Plan into Test Plan template	Review not done (in template)	To be done 5/6/2014
	Calibrate the tension system; get fixture from Lidija; work with A re time with machine	Calibration tests done to get slope. There is drift over time whose cause is not yet known. Present results are sufficient for now. More precise tests will be done later	6/3/2014
	Test functionality of the reel up/down system		6/3/2014
	Test programmatic motion control of the tension motor.		6/3/2014

### Sergey

	Create note on naming conventions on I/O channels	Clarified, not done.	Incomplete 4/29/2014
	Meet with Andrzej and Jerzy decide on synchronizing motor motion inside FPGA	Not yet done.	5/20/2014
	Add the reel and tension motor control to the motor test and PID tuning program.		6/3/2014

### Dana

	After wiring has been okayed and trenches are covered, then inspect the area for small objects and have them removed		Suspended – waiting for wiring OK
	Investigate and order sensor tubing	Several sizes of tubing have been ordered. If any of them works, this will be complete for the boom. May need	Continue 5/6/2014

		to order more tubing for the bridge if bump sensors there are not replaced.	
	Create proposal for additional or replacement collision sensors and order the sensors.	Investigate pressure sensitive edges and bumpers. Asked Jim Rife and Fred Nobrega about sensitivity requirements. They want new bumper switches to be close to the old bumpers in sensitivity.	Continue 5/27/2014

**Kelley**

	Get a spreadsheet of the results of testing I/O signals.	Put in SELVA wiki	5/20/2014
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• **Completed Action Items**

	Fred Lewis	Finish debugging traffic light	Complete.	6/3/2014
	Jerzy Nogiec	Will meet with Fred Nobrega, Jim Rife and Rick Smith to talk about the mandrel and lowering the bridge	Fred Nobrega and Jim Rife attended this meeting, which effectively covered issues about the mandrel and lowering the bridge.	6/3/2014
	Dana	Hazard analysis for general SELVA testing	H.A. is done. The paper copy is hanging on the Bridge near the controls, to be signed by testers and others needing to be in the vicinity.	6/3/2014