

SELVA Meeting 06/24/2014

Attendees: Jerzy Nogiec, Roger Nehring, Dana Walbridge, Kelley Trombly-Freytag, Fred Lewis, Lidija Kokoska

• Project Status

- Focus: tension control and motor synchronization
- Work on synchronizing Bridge and Mandrel motors looks promising, preliminary tests show the algorithm works. The algorithm depends on the speed, and the faster the movement the more difficult the synchronization; after a certain velocity, the motors won't sync. If this happens, the Bridge will stop. Email has been sent to Fred Nobrega asking for the expected motion speeds for Bridge and Mandrel to ensure we can meet the requirements. If we can't, the algorithm in FPGA will need to be modified.
- The Mandrel has a problem – when operating 3 motors, 2 work together with no problems and the 3rd won't work with the other two, though that motor (the middle one) can be moved separately. We tested that we can move concurrently 3 or even 4 motors, so we need to investigate it.
- Reel Up/Down automated works
- Tension feedback PID needs tuning; winch not yet set up. Winch will be tested (on a bench) for maximum force, then it should be installed in IB3
- The panel for failsafe is basically done, except that new sensors may need to be added for the new hardware. This can be done in advance of the hardware installation, but we don't have the documentation. It can also be done after the hardware installation.
- The tension encoder has a lot of play, but it is a temporary solution. The new encoder (that has been ordered) will be installed there for permanent use.
- We have not yet received the parts that have been ordered to repair the encoder.
- Failsafe collision sensor order: order 4 sensors for the bridge. We will order more if needed.
- The Functional Description for SELVA has been written by Fred Nobrega. It has several items that were not known to be a part of the specification. It looks like there will be several states and possibly modes of operation. Everyone should read this document and be ready for a discussion by the next meeting.

• Meeting Topics

1. Action items from the previous week
2. Status of the tension subsystem test.
3. Status of the reel up/down control test
4. Status of the motor synchronization work
5. Safety bumper switches: sensitivity, status
6. Safety, ideas, comments, etc. (all)

- **Safety**

- We should take precautions not to stress the wooden strongback when testing. Can we safely measure the force on it when testing? The test description needs to have added the air pressure should be closed.

- **Problems**

- Mandrel motor problem.
- The winch motor burned out and we received a replacement.

- **Action Items**

Jim Rife, Rick Smith, etc.

Lower the Bridge to the tracks/rails.	To be done after motors are running correctly and other testing.	Suspended 6/10/2014
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Fred Nobrega

Check out possible problems with Mandrel z drive	Makes noise -Handling this will be transitioned to Luciano, who is very busy. -Rick and Jim did not think this was much of an issue	6/10/14
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Fred Lewis

Repair the existing damaged encoder	Waiting on ordered parts, should come in week of 6/17	5/20/2014
Install safety system improvements this weekend if panel is complete	Installation will wait until Andrzej comes back	5/27/2014
Ensure we have replacement encoders for future use	Will try to order an universal encoder Still in process 6/24	5/27/2014

Lidija

Implement mechanical setup for tension testing	In process 6/24	Continue 5/6/2014
Install temporary wooden "strongback" for mandrel sync tests	We have the wooden strongback, and are waiting on go ahead for installation -waiting on go ahead from Sergey	Suspended 6/10/14
Bench test and then install winch		

Andrzej

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Jerzy

	Schedule for Wednesday	Fred needs to know if we need an extended schedule for Wednesday.	6/24/2014
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Roger

	Execute and document tension control test plan	Documentation is complete, execution suspended on mechanical work; In progress	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
	Test programmatic motion control of the tension motor.	In progress 6/24	6/3/2014
	Load cells calibration note	Not complete	6/10/2014

Sergey

	Create note on naming conventions on I/O channels	Clarified, not done.	Incomplete 4/29/2014
	Add the reel and tension motor control to the motor test and PID tuning program.	Not complete	6/3/2014
	Work on synchronizing the mandrel motors	In progress	6/10/14

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 create proposal for additional or replacement collision sensors and order the sensors.	5/6: investigation of tubing started 6/10: investigate ordering bumpers From Tapeswitch	5/27/2014
	Document: Machine Start checklist	Needs input from Andrzej	6/10/14
	Document: Interlock list	In progress 6/24	6/10/14
	Document: Permissives	In progress 6/24	6/10/14
	Mandrel test plan	Test plan created. Out for feedback 6/17,6/24	6/10/14
	Document: Note on bridge light color	Document created. Out for feedback	6/10/14

	6/17, 6/24	
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Kelley

Get a spreadsheet of the results of testing I/O signals.	Put in SELVA wiki All I/O signals not yet defined - doc not complete	Suspended 5/20/2014
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TBD

Add comments to the FPGA I/O test program	Describe all I/O channels	TBD
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• **Completed Action Items**

Fred Lewis	Ensure power cabinet lights work correctly	Complete	6/17/2014
Roger	Test functionality of the reel up/down system	In progress Complete	6/24/2014
Fred Lewis	Set up power for tension testing	Check the winch and install power for it in IB3. Ensure power supply is sufficient	6/24/2014