

## SELVA Meeting 07/22/2014

Attendees: Jerzy Nogiec, Roger Nehring, Sergey Kotelnikov, Cosmore Sylvester, Fred Lewis, Fred Nobrega, Dana Walbridge

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### • Project Status

- **The highest priority: the tension system, followed by the reel control system and motor synchronization.**
- Machine status: the machine is operational.
- Fred N mentioned that they are winding a coil in IB3 as a test using the same mandrel they intend to use for the SELVA test. This will be 3 to 4 weeks from now, so we will try to be ready for the winding test at that time. This will also be a good opportunity to observe what transpires during coil winding.
- Requisitions:
  - 2 x 242 drivers. We need to continue looking for the supplier. In the meantime we can modify ourselves a 241 board.
  - An angular encoder for the X axis - ongoing
- Repairs/electronics:
  - Finish repair of the angular encoder
  - Build another interface board, populate it and make connections – ordering parts
- Safety improvements:
  - On Friday, prepare to install emergency trip system upgrades on Saturday. Need final specs for bumpers. Dana will check on the bumper order status.
  - Boom will have tigon tubing replaced - ongoing
- Motion control:
  - The personality card for the drive V may need to be re-examined.
  - We may consider limiting the rate of changes of PID output to stop the motor cutting out problem
- Tension system:
  - The new tension algorithm should work. Once implemented in the real-time system and tested, it will be migrated to the FPGA.
  - The problem with the winch was tension increased with current ramp, but when current decreases the winch mechanically locks. The locking mechanism can be disabled, so this should be tested again. Max. current produces 50lbs.
  - The winch should be mounted again. Contact Terry Cross for someone to work with while Lidija is on vacation.
  - Since the load cell calibrations have already changed we will need to re-calibrate the load cells again in couple of weeks.
- Synchronization testing will coordinate with tension

## • Meeting Topics

- 1) Action items from the previous week
- 2) Status of the machine (Andrzej)
- 3) Status of the tension control system
  - a) Re-calibration
  - b) New algorithm
- 4) Status of motion synchronization (Sergey)
- 5) Implementation of the machine "start" button functionality (Andrzej, Jerzy)
- 5) Implementation of the improvements to the safety system (Fred L., Dana)
- 6) Status of requisitions
- 7) Safety, ideas, comments, etc. (all)

## • Safety

Everybody make sure to sign the modified HA in IB3.

## • Problems

- The load cells show large noise when motors are running. Grounding and shielding have not helped. Filtering may help. This is not so bad that it will prevent the winding test.
- We have observed different velocities of the mandrel motors, not easily correctable via the normal adjustment on the driver.

## • Action Items

**Jim Rife, Rick Smith, etc.**

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

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**Fred Lewis**

	Repair the existing damaged encoder	Parts are in. Should be complete week of 7/15	5/20/2014
	Install safety system improvements if panel is complete	7/15 : back in queue after driver hold 7/22 basically ready to install. Will start Friday afternoon and continue in to Saturday	5/27/2014
	Ensure we have replacement	7/15 Will be ordered: an X drive a/e	5/27/2014

	encoders for future use		
	Review the requisition for a new driver – get the newest version they have of 242	7/15: back in queue after driver hold	7/1/2014
	Work on 2 <sup>nd</sup> interface board, which will be the production model		7/15/2014

### Lidija

	Reinstall winch		7/15/2014
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### Andrzej

	Add comments to the FPGA I/O test program	Describe all I/O channels In progress 7/15	7/1/2014
	Coordinating adjusting speed and offset for all motors		7/15/2014

### Jerzy

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### Roger

	Execute and document tension control test plan	Documentation is complete, execution suspended on mechanical work; In progress	4/22/2014
	Test programmatic motion control of the tension motor.		6/3/2014

### Sergey

	Create note on naming conventions on I/O channels	In progress	4/29/2014
	Add the reel and tension motor control to the motor test and PID tuning program.	Postponed	6/3/2014
	Work on synchronizing the mandrel and bridge motors	In progress, working on software	6/10/14
	Review Mandrel Test Plan		7/8/14

### Dana

	After wiring has been okayed and trenches are covered, then inspect		Suspended – waiting for
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	the area for small objects and have them removed		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 7/1: Bumper order in system, single bumper in each position 7/15: Check status of order 7/22: Sensing edges were to be shipped on the 18'th, and should be here this week. (note: after the meeting Dana was informed that they were in IB4. He got them and to them to Fred L.)	5/27/2014
	Install new tubing	Dana will install tubing on the boom, starting on Friday if he is here.	7/15/2014
	Mandrel test plan	7/15: waiting on Sergey	6/10/14

### 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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### Everyone

	Document: Machine Start checklist	Needs input from Andrzej	7/15/2014
	Document: Interlock list	Needs review	7/15/2014
	Document: Permissives	Needs review	7/15/2014

## • Completed Action Items

	Fred Nobrega	Check out possible problems with gear box	Luciano tried to check but found no one. Problem fixed via other methods; complete unless problem shows up again	7/15/2014
	Lidija	Implement mechanical setup for tension testing	Complete	7/15/2014
	Lidija	Install temporary wooden "strongback" for mandrel sync tests	Complete	7/15/2014
	Andrzej	Driver overheating problem	Fixed	7/15/2014
	Jerzy	Functional requirements clarification	Meeting held	7/15/2014
	Dana	Document: Note on bridge light	Document complete	7/15/2014

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Dana	Meeting with Roger, Sergey, Jerzy on the Startup, Permissives and Interlock list to get input	Complete	7/15/2014
Dana	Send reminder email for everyone to read the updated Hazard Analysis	Sent	7/15/2014