

# Budget and Schedule

Hovanes Egiyan

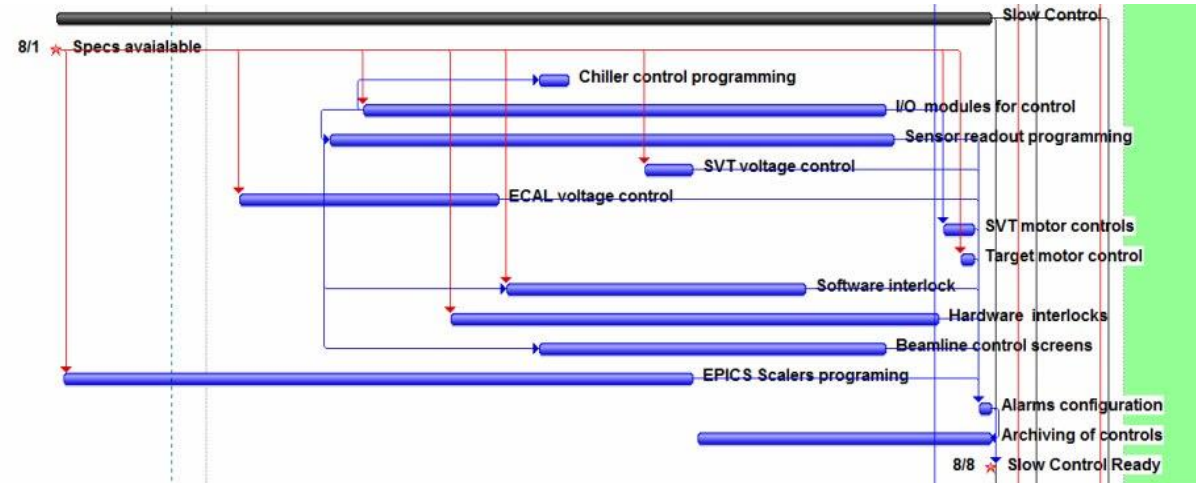
# Baseline Project Budget

ID	WBS	Task Name	Type	Labor	Ltotal	Material	Mtotal	Total	Spares	Prototypes	Total Operations	Total Infrastructures	Total Capital Equipments
126	1.6	<b>1.6 Slow Control</b>		\$75,527.60	\$94,409.50	\$31,290.00	\$39,112.50	\$133,522.00	\$0.00	\$0.00	\$0.00	\$27,937.50	\$105,584.50
127	1.6.1	1.6.1 Chiller control programming EE Accelerator JLAB Hovanes Hegiyan (Phys)		\$8,885.60 \$8,885.60 \$0.00	\$11,107.00 \$11,107.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$11,107.00 \$11,107.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$11,107.00 \$11,107.00 \$0.00
128	1.6.2	1.6.2 I/O modules for control I/O Modules for controls Hovanes Hegiyan (Phys)	INFRA	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$22,350.00 \$22,350.00 \$0.00	\$27,937.50 \$27,937.50 \$0.00	\$27,937.50 \$27,937.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$27,937.50 \$27,937.50 \$0.00	\$0.00 \$0.00 \$0.00
129	1.6.3	1.6.3 Sensor readout programming Nerses Gevorgyan (EE) Hovanes Hegiyan (Phys)		\$13,328.40 \$13,328.40 \$0.00	\$16,660.50 \$16,660.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$16,660.50 \$16,660.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$16,660.50 \$16,660.50 \$0.00
130	1.6.4	1.6.4 SVT voltage control Hovanes Hegiyan (Phys) Nerses Gevorgyan (EE)		\$13,328.40 \$0.00 \$13,328.40	\$16,660.50 \$0.00 \$16,660.50	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$16,660.50 \$0.00 \$16,660.50	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$16,660.50 \$0.00 \$16,660.50
131	1.6.5	1.6.5 ECAL voltage control Hovanes Hegiyan (Phys) Nerses Gevorgyan (EE)		\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00
132	1.6.6	1.6.6 SVT motor controls EE Accelerator JLAB Hovanes Hegiyan (Phys)		\$8,885.60 \$8,885.60 \$0.00	\$11,107.00 \$11,107.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$11,107.00 \$11,107.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$11,107.00 \$11,107.00 \$0.00
133	1.6.7	1.6.7 Target motor control EE Accelerator JLAB Hovanes Hegiyan (Phys)		\$4,442.80 \$4,442.80 \$0.00	\$5,553.50 \$5,553.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$5,553.50 \$5,553.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$5,553.50 \$5,553.50 \$0.00
134	1.6.8	1.6.8 Software interlock EE Accelerator JLAB Hovanes Hegiyan (Phys)		\$4,442.80 \$4,442.80 \$0.00	\$5,553.50 \$5,553.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$5,553.50 \$5,553.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$5,553.50 \$5,553.50 \$0.00
135	1.6.9	1.6.9 Hardware interlocks Hardware Interlock Equipments EE Hall-B JLAB Hovanes Hegiyan (Phys)		\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$8,940.00 \$8,940.00 \$0.00 \$0.00	\$11,175.00 \$11,175.00 \$0.00 \$0.00	\$11,175.00 \$11,175.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$11,175.00 \$11,175.00 \$0.00 \$0.00
136	1.6.10	1.6.10 Beamline control screens Nerses Gevorgyan (EE) Hovanes Hegiyan (Phys)		\$4,442.80 \$4,442.80 \$0.00	\$5,553.50 \$5,553.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$5,553.50 \$5,553.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$5,553.50 \$5,553.50 \$0.00
137	1.6.11	1.6.11 EPICS Scalers programing Nerses Gevorgyan (EE) Hovanes Hegiyan (Phys)		\$8,885.60 \$8,885.60 \$0.00	\$11,107.00 \$11,107.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$11,107.00 \$11,107.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$11,107.00 \$11,107.00 \$0.00
138	1.6.12	1.6.12 Alarms configuration Nerses Gevorgyan (EE) Hovanes Hegiyan (Phys)		\$4,442.80 \$4,442.80 \$0.00	\$5,553.50 \$5,553.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$5,553.50 \$5,553.50 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$5,553.50 \$5,553.50 \$0.00
139	1.6.13	1.6.13 Archiving of controls EE Accelerator JLAB		\$4,442.80 \$4,442.80	\$5,553.50 \$5,553.50	\$0.00 \$0.00	\$0.00 \$0.00	\$5,553.50 \$5,553.50	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$5,553.50 \$5,553.50

**\$106,817.6**

# Baseline Project Schedule

128	1.6	<b>Slow Control</b>	256 days	Thu 8/1/13	Fri 8/8/14
129	1.6.1	Specs available	0 days	Thu 8/1/13	Thu 8/1/13
130	1.6.2	Chiller control programming	2 wks	Mon 2/10/14	Fri 2/21/14
131	1.6.3	I/O modules for control	7 mons	Mon 12/2/13	Fri 6/27/14
132	1.6.4	Sensor readout programming	30 wks	Tue 11/19/13	Tue 7/1/14
133	1.6.5	SVT voltage control	3 wks	Mon 3/24/14	Fri 4/11/14
134	1.6.6	ECAL voltage control	13 wks	Mon 10/14/13	Fri 1/24/14
135	1.6.7	SVT motor controls	2 wks	Mon 7/21/14	Fri 8/1/14
136	1.6.8	Target motor control	1 wk	Mon 7/28/14	Fri 8/1/14
137	1.6.9	Software interlock	17 wks	Tue 1/28/14	Mon 5/26/14
138	6.10	Hardware interlocks	7 mons	Mon 1/6/14	Fri 7/18/14
139	6.11	Beamline control screens	5 mons	Mon 2/10/14	Fri 6/27/14
140	6.12	EPICS Scalers programing	34 wks	Mon 8/5/13	Fri 4/11/14
141	6.13	Alarms configuration	1 wk	Mon 8/4/14	Fri 8/8/14
142	6.14	Archiving of controls	17 wks	Mon 4/14/14	Fri 8/8/14
143	6.15	Slow Control Ready	0 days	Fri 8/8/14	Fri 8/8/14



- We aim at completion of the requirements from the working groups within the budget in the proposal in May 2013.
  - Success depends on the resources (manpower) we allocate
- Produce new list of task with names assigned if possible.
  - Consider as a preliminary work plan with schedule
  - New tasks in the new list are within the scope of the baseline
- Milestones from working groups:
  - 15 May 2014 - Voltages for SVT test at SLAC
  - 28 Feb 2014 - Pair Spectrometer power supply controls are ready
  - 01 Feb 2014 - SVT motor setup sent to SLAC
  - 31 May 2014 - ECAL voltage control
  - 08 Aug 2014 - All controls are ready

# Working Budget & Schedule

## Material

Items	Cost estimate
PLC chassis for interlocks	\$6,000
Embedde PC for chiller controls	\$1,600
Additional I/O modules	\$3,000
Accessories	\$3,000
<b>Total</b>	<b>\$13,600</b>

## Travel

Person	Ticket	Per diem + Lodging	Total
Visitor 1	\$1,000	\$24,000	\$25,000
Visitor 2	\$1,000	\$24,000	\$25,000
<b>Total</b>	<b>\$2,000</b>	<b>\$48,000</b>	<b>\$50,000</b>

# Tasks and Labor

Activity	Person 1	Person 2	Start	End	Labor (man-weeks)	Project \$
SVT motors to SLAC	Krister	Hovanes	1-Dec-13	30-Jan-14	1	\$0
Frascati magnets PS controls	Krister		1-Dec-13	30-Apr-14	3	\$0
Pair spectrometer PS controls	Krister		1-Dec-13	28-Feb-14	1	\$0
Moeller quads and Helmholtz coil	Krister		1-Feb-14	30-Jun-14	1	\$0
Gaussmeters controls	Hovanes	Student	1-Mar-14	30-Jun-14	1	\$0
Moeller, collimator, 2C21, 2C24, collimator motors	Krister	Hovanes	1-Apr-14	30-May-14	1	\$0
Target, blocker, 2H00 motors	Krister	Hovanes	1-Apr-14	30-May-14	1	\$0
SVT PLC connection and programming	Krister		1-May-14	30-Jul-14	3	\$0
SVT wire scan software	Student		1-Apr-14	30-Jul-14	8	\$0
SVT motion system test at SLAC	Takashi	Sho	1-Mar-14	30-Mar-14	2	\$0
Chiller controls	Accelerator		14-May-14	30-Jun-14	4	\$15,000
EPICS Controls GUIs	Student		1-Jun-14	30-Aug-14	6	\$0
ECAL voltage IOC	Nerses	Hovanes	10-Jan-14	30-Mar-14	1	\$0
SVT voltage IOC	Nerses	Hovanes	10-Jan-14	28-Feb-14	1	\$0
CA Server in SVT DAQ	Bryan		1-Feb-14	17-Mar-14	2	\$0
ECAL voltage GUIs	Bryan		1-Dec-13	30-Apr-14	4	\$0
SVT voltage GUIs	Bryan		1-Dec-13	30-Apr-14	4	\$0
SVT voltage integration at SLAC	Bryan		15-May-14	30-May-14	2	\$0
ECAL temperature monitoring	Krister	Hovanes	1-Jun-14	30-Jul-14	0.5	\$0
ECAL light monitoring	Bryan	Andrea	10-Jan-14	15-Jun-14		\$0
Alarm system	Student		1-Jun-14	30-Aug-14	6	\$0
ECAL integration	Bryan		15-Aug-14	15-Sep-14	1	\$0
SVT integration at JLAB	Pelle	Bryan	15-Aug-14	15-Sep-14	1	\$0
Interlock checkout	Krister		25-Aug-14	10-Sep-14	0.5	\$0
EPICS Archiving	Student		1-Aug-14	15-Sep-14	2	\$0
Scalers in EPICS	Hovanes	Student	10-Jan-14	30-May-14	2	\$0
Helicity and 60Hz	Student		1-Jul-14	1-Aug-14	2	\$0
<b>Total</b>					<b>61</b>	<b>\$15,000</b>

**Current Total Cost Estimate:**  
 $\$50000 + \$15000 + \$13600 = \$78600$   
 (\$106,817 in WBS).

**Total Labor Estimate: 59 man-weeks**

- Approximately 1 FTE (if not counting student time x2 inflation)

# Summary

- We collected enough information to start working
  - The corrections and new requirements should come as soon as possible
- Identified more people willing to contribute to HPS slow controls
  - Bryan from Glasgow, Ani from Yerevan.
- Working schedule with assign dates and people exists in preliminary form
  - Finalizing the manpower assignment
  - Still need to negotiate with JLAB Accelerator Controls Group
  - Current plan assumes significant contribution from visitors
    - Travel expenses
- In the current plan both labor and material costs are well within the budget.
  - Usually more controls requirements and tasks appear as we get closer to the experiment.
- The main work is still to be done.