ISG-X Thursday Plenary
June 19, 2003

N.Toge (KEK) to initiate discussions by Everyone.
Let us Recall the ISG-X Charges

1. R1: Discuss technical issues, progress, and plans toward meeting TRC R1 demonstration requirements.

2. R2: Discuss technical issues, progress, and plans toward meeting TRC R2 demonstration requirements.

3. Prep tech inputs: Prepare for the international technology selection process that is expected to occur in 2004. Discuss how we best present the case for the X-Band collider technology.
R1- Acc Structures

Now:
- Process H60VG3S18
  [but not likely to clear R1 goal for the BD rate]
- Quick prep and test H60VG3A17 (SLAC)

Soon:
- Prepare FXBs – H60VG3S17 (FNAL)
- Prepare H60VG4S17 (SLAC/KEK)
  - Note: this one has HOM slots but NO HOM Extraction

Goal:
R1/R2 comments – Acc Structures

- Immediate Focus Items
  - Get cell table ready for H60VG4S17
  - Get cells ready ASAP
  - Get I/O couplers ready…

- Then, Move on to Design/Fab work for H60VG4S17-HOM
  - HOM couplers
  - Designs of irregular cells
  - Fabrication (late 2003)
### Structure Testing Schedule

#### 2003

<table>
<thead>
<tr>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
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</table>

**2004**

- *VG3(6C) and FXB3 Complete*

<table>
<thead>
<tr>
<th></th>
<th>SW20a375 (Standing Wave Structure Pair)</th>
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<tbody>
<tr>
<td>SLAC</td>
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<thead>
<tr>
<th></th>
<th>H60VG3S18 (0.18, 150°, slots)</th>
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<tr>
<td>SLAC</td>
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<th>CERN Test Structures (W and Mo irises)</th>
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<th>H75VG4S18 (0.18, 150°, slots)</th>
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<tr>
<td>SLAC</td>
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<tr>
<th></th>
<th>2 x H60VG3A17 (0.17, no slots)</th>
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<tr>
<td>SLAC</td>
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<td>KEK/SLAC</td>
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<thead>
<tr>
<th></th>
<th>(60VG3S17(4XG) (0.17, 150° slots)</th>
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<tbody>
<tr>
<td>FNAL</td>
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**HG Structures Test**

HG Structures Test is 4.8 meters of structures running at 65 MV/m in NLCTA.
R1 – SLED-II

- Goal: 475 MW, 400ns to load-tree.
- And…
Phase 1 Project schedule

MAC / ISG-X

Begin System Commissioning: 9/4

copy of schedule attached

DCS, June 23, 2003
<table>
<thead>
<tr>
<th>Schedule Chart</th>
<th>SLED-II Back-up Plan</th>
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<tbody>
<tr>
<td><strong>SLED-II Head</strong></td>
<td><strong>Single-Height</strong></td>
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<tr>
<td><strong>Design and Approval</strong></td>
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<tr>
<td><strong>SLED-II Head</strong></td>
<td><strong>Over-Height</strong></td>
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R2 – SLED-II + Acc.Struc.

- R2-ready acc. Structures
  - H60VG4S17-HOM needs work on
    - HOM extraction design
    - RF QC
    - Assembly work similar to what it took to build RDDS1

- SLED-II + Power distribution (w. XL4s)
  Need some attempts at scheduling –
  - SLED-II R1 to complete when?
  - Power splitters readied when?
  - System integration when?
Phase 2 8-Pack Layout

Schematic of the power handling to the beamline

From SLED

D. Schultz, June 18, 2003
Phase 2 8-Pack Layout

Simplified configuration for initial running.

Motivation: get 8 structures powered as soon as possible.

What is this? WR90? Overmoded?
A KEK device? A SLAC design?

From SLED

3 dB 3 dB 3 dB

From NLCTA station 1

3 dB

From NLCTA station 2

3 dB 3 dB 3 dB

300MW, 400 ns

These structures could be located in stations 1 & 2.

D. Schultz, June 19, 2003
New Working Assumptions
(June 19, 2003)

- Acc. Structures
  - Ready 4 – 5 structures H60VG3S17 / H60VG4S17 for testing in Jan/Feb 2004 (with HOM slots but without HOM extraction).
  - Strucs with HOM extraction will follow

- SLED-II
  - Phase-I test to start in Sep 2003.

- People to work out the schedule details.
R2 - Klystrons

- Already active programs ongoing in 2003
  - PPM #2 being tested at SLAC (Since Feb., 2003)
  - PPM #4 being tested at KEK → SLAC (July, 2003)
  - PPM #5 to build at KEK (~ Dec., 2003)
  -XP3- being tested at SLAC (Since Apr., 2003)
  - More XP3 and new XP4 at SLAC

- When will we see decisive positive results and how? – Relevant parties, please, produce the action plan outline and share it with the rest of the collaboration.
Other High-Priority Items

- Items that help clear R1/R2 or items that help clarify the technical / engineering feasibility of NLC/GLC.
  - (R1 + R2 $\rightarrow$ Energy issues)
  - DR / ATF $\rightarrow$ Luminosity issues
  - Nano-BPM $\rightarrow$ Lumi. Issues
  - Main linac engineering descriptions (topic Thursday AM)

- What else? Please, identify.