

FFTB - SPPS Network

January 29 - February 4, 2003

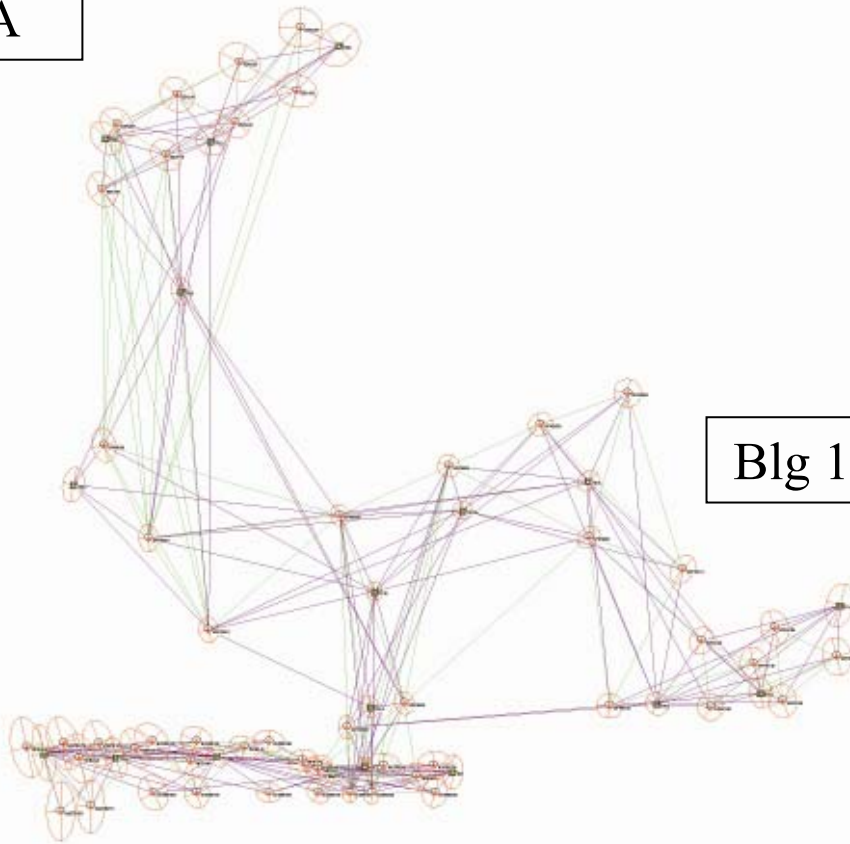
- Expand monumentation inside the FFTB tunnel.
- Install new monuments in Building 113.
- Tie these 2 sets of 3D monuments to the existing FFTB network.
- Tie with the End Station A network for blunders.

Network Description

- Existing points:
 - 6 floor and 4 wall in FFTB tunnel.
 - 8 floor in ESA.
- New points dedicated to the project:
 - 2 floor and 13 wall in FFTB tunnel.
 - 6 floor in building 113.
- Other new points for geometry purpose:
 - 12 in parking lot.

Network Simulation

ESA



Blg 113

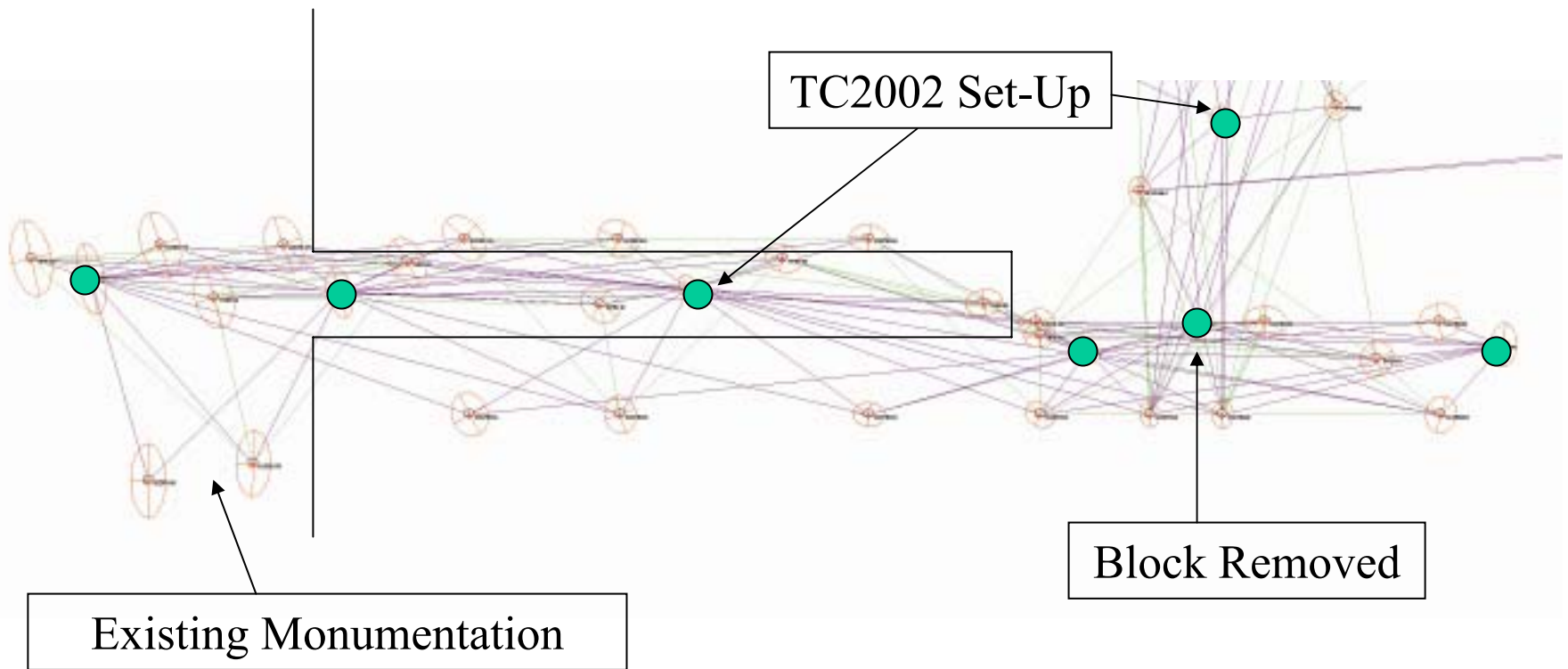
FFTB

Datum Free

18 total stations
(191 triplets):
distance 250 μm ,
horizontal and
vertical angles
100 $\mu\text{m} / \text{D}$.

108 height
differences 50 μm

Simulation Close-Up



Datum Choices Options

- Free Network based on selected group of points.
- Weighted Network based on selected group of points.
- Minimal Constrained Network, option 1:
 - 1 point fixed in all 3 coordinates.
 - 1 plane coordinate fixed for another point.
- Minimal Constrained Network, option 2:
 - 1 point fixed in all 3 coordinates.
 - 2 plane coordinate fixed for another point.
 - Solve for scale discrepancy

Network Results

Minimal Constrained Option 1 Pt1

- FFTB floor changes in meters from 1/27/98
 - TNTB125 0.000000 0.000000 0.000000
 - TNTB130 0.000103 -0.000045 -0.000021
 - TNTB135 0.000218 0.000069 -0.000047
 - TNTB140 0.000449 0.000070 0.000031
 - TNTB145 0.000392 0.000008 -0.000018
 - TNTB150 0.000411 0.000000 0.000025
- FFTB wall changes in meters from 8/19/93
 - N3DTB170 -0.001393 -0.000632 -0.000547
 - N3DTB175 -0.001655 -0.000250 -0.000797
 - S3DTB170 -0.001445 0.000095 -0.001654
 - S3DTB175 -0.001193 0.000591 -0.001964

Network Results

Minimal Constrained Option 2 Pt1

- FFTB floor changes in meters from 1/27/98
 - TNTB125 0.000000 0.000000 0.000000
 - TNTB130 -0.000072 -0.000033 -0.000026
 - TNTB135 0.000037 0.000069 -0.000052
 - TNTB140 0.000265 0.000061 0.000024
 - TNTB145 0.000183 -0.000011 -0.000025
 - TNTB150 0.000000 0.000000 0.000017
- FFTB wall changes in meters from 8/19/93
 - N3DTB170 -0.001568 -0.000622 -0.000555
 - N3DTB175 -0.001833 -0.000245 -0.000801
 - S3DTB170 -0.001615 0.000118 -0.001668
 - S3DTB175 -0.001369 0.000611 -0.001969

Network Results

Minimal Constrained Option 1 Pt2

- ESA floor changes in meters from 6/22/00
 - ESA100 0.000917 0.001765 -0.000115
 - ESA110 0.000953 0.001162 -0.000601
 - ESA120 0.001033 0.000615 -0.000769
 - ESA130 0.001251 0.000160 -0.000603
 - ESA200 0.001098 0.001497 -0.001930
 - ESA210 0.001227 0.001015 -0.000982
 - ESA220 0.001354 0.000610 -0.000851
 - ESA230 0.001689 0.000000 -0.001198

Network Results

Minimal Constrained Option 2 Pt2

- ESA floor changes in meters from 6/22/00
 - ESA100 0.000755 0.001785 -0.000121
 - ESA110 0.000799 0.001174 -0.000608
 - ESA120 0.000886 0.000620 -0.000775
 - ESA130 0.001110 0.000159 -0.000609
 - ESA200 0.000944 0.001518 -0.001936
 - ESA210 0.001080 0.001031 -0.000988
 - ESA220 0.001215 0.000619 -0.000857
 - ESA230 0.001558 0.000002 -0.001204