TEGID-03

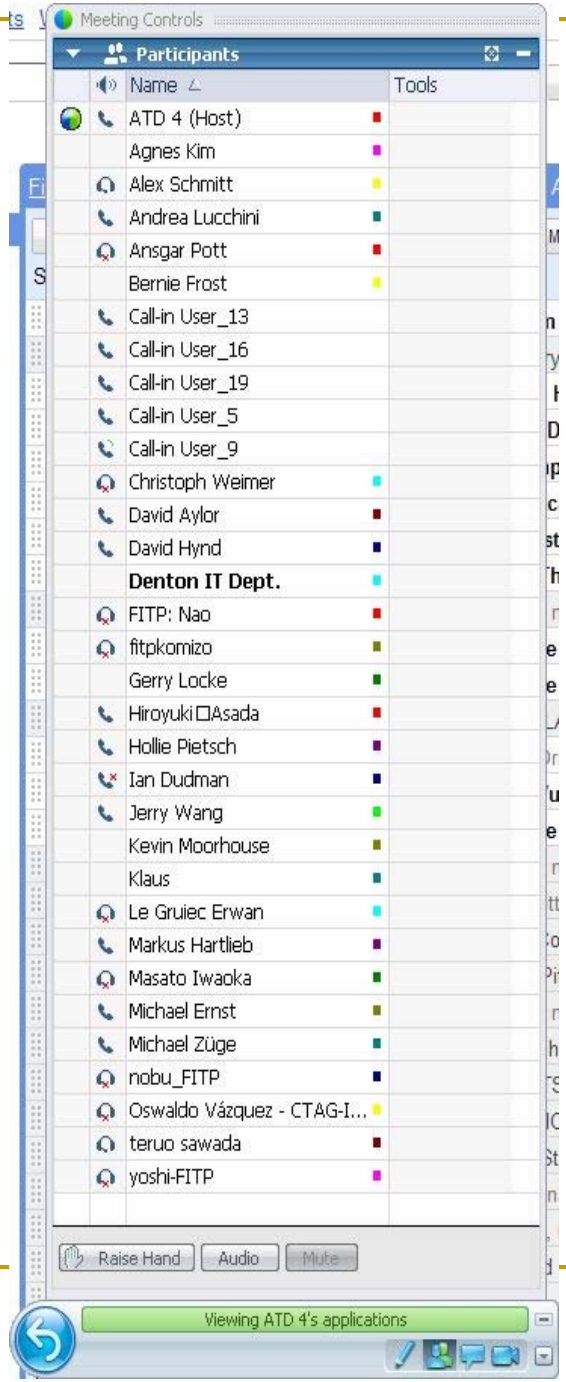
Welcome to TEG BioRID Meeting

March 15,2010

6:00 am New York Time

DENTON

Attendees


Meeting Controls
Participants
Name
Tools
ATD 4 (Host)
Agnes Kim
Alex Schmitt
Andrea Lucchini
Ansgar Pott
Bernie Frost
Call-in User_13
Call-in User_16
Call-in User_19
Call-in User_5
Call-in User_9
Christoph Weimer
David Aylor
David Hynd
Denton IT Dept.
FITP: Nao
fitpkomizo
Gerry Locke
Hiroyuki□Asada
Hollie Pietsch
Ian Dudman
Jerry Wang
Kevin Moorhouse
Klaus
Le Gruiec Erwan
Markus Hartlieb
Masato Iwaoka
Michael Ernst
Michael Züge
nobu_FITP
Oswaldo Vázquez - CTAG-I...
teruo sawada
yoshi-FITP
Raise Hand
Audio
Mute
Viewing ATD 4's applications

Agenda

- Chairman Bernd Lorenz
- Introductions
- Goals for Committee
- Presentations
  - GM Presentation
  - Asada Seating Torso Angle Presentation
  - FTSS Mini Sled Design
  - Denton ATD
- Next Meeting
  - April 28,2010 Webex Meeting @ 6:00 am EDT

Denton Presentation Agenda

- Denton COE update
- Update on Certification Corridors based on new sled and dummies tested to date.
- Plan for Head Rest Test Development
- Plan for Dummy Test Investigations
- Drawing Review

Denton COE Update

- The next action items at COE are:

  - Test four BioRID Dummies (2 Bast, 2 PDB) to the proposed corridors (Week of March 15, 2010)

  - Meeting with PDB on the dummy positioning and spine setup for different seat back angles and analysis of PDB testing with two dummies at Porsche / COE (Wednesday and Thursday)

Sled Specifications

- Probe Velocity: 4.70 – 4.80 m/s
- Probe Weight: 37.61kg +/- .1 kg
- Weight Package: 25.50 +/-.02 kg
- Sled Weight w/o headrest: 44.25 kg +/- .05 kg
- Sled Weight headrest: (under development)
- Sled weight w/headrest: (under development)
- Sled equipment
  - Procedure for level and install
  - Set up procedures
- *Sled only test corridors*
  - *Pendulum Force: 9200N +/- 600*
  - Peak sled acceleration: 127 M/s2 +/- 9 M/s^2
  - *Peak Sled Velocity: 2.8 +/- 15 m/s*
  - Velocity slope from 50 to 150 ms: 0 to -1.5 (m/s)/s

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Certification Corridors

- Using revised Certification Sled
- Corridors created using all dummy testing available to date. 12 dummies tested in 4 labs. Based on =/- 3 Standard Deviation of population.
- Many of the Corridors are similar to original ones but adjusted for the new sled at eliminates the bounce and a crushable foam that was not repeatable.

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12 Dummy Certification Corridors Comparison for new sled

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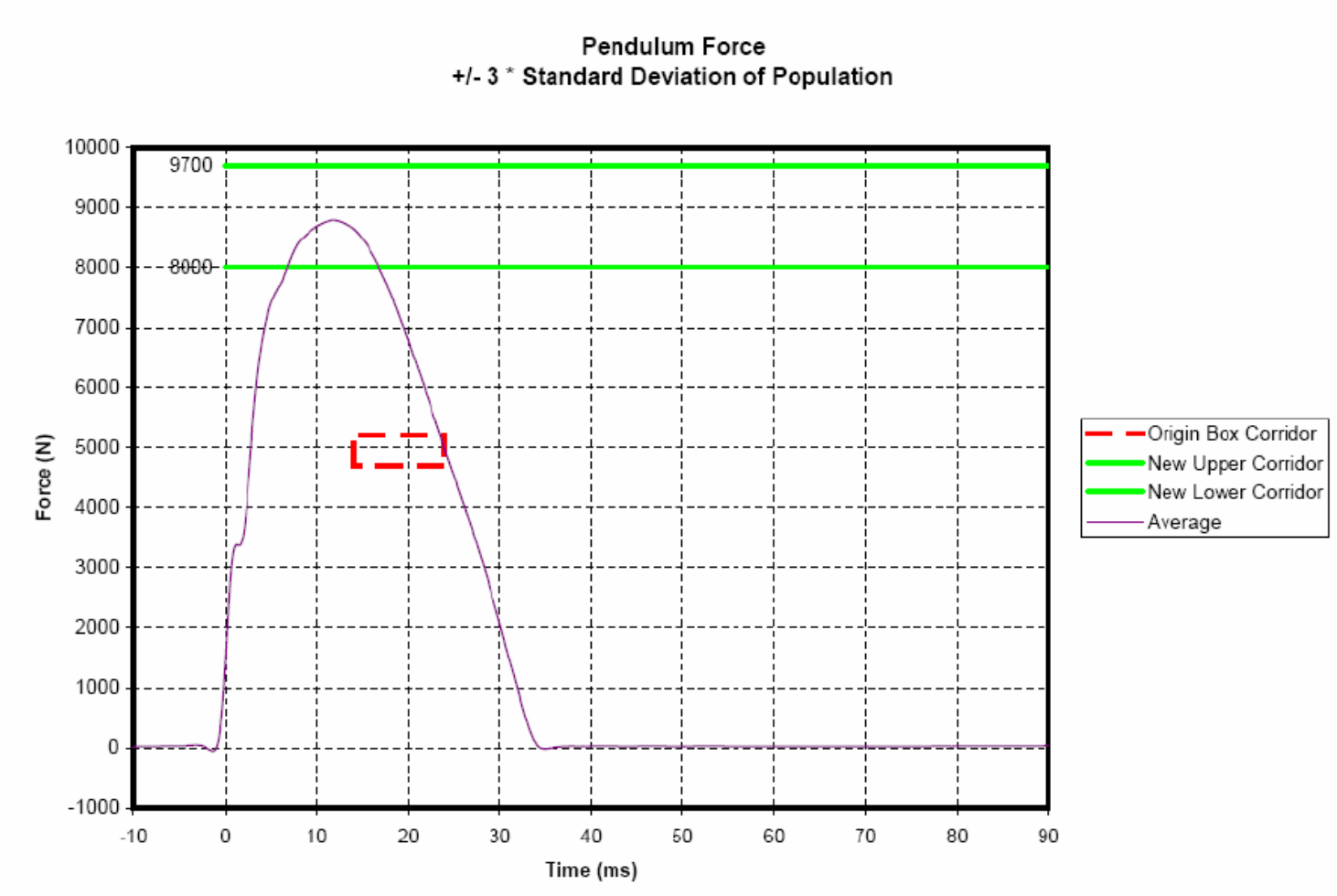
NOTE

- Dummies outside the Draft Limits were know to be a problem.

Pendulum Force Limits



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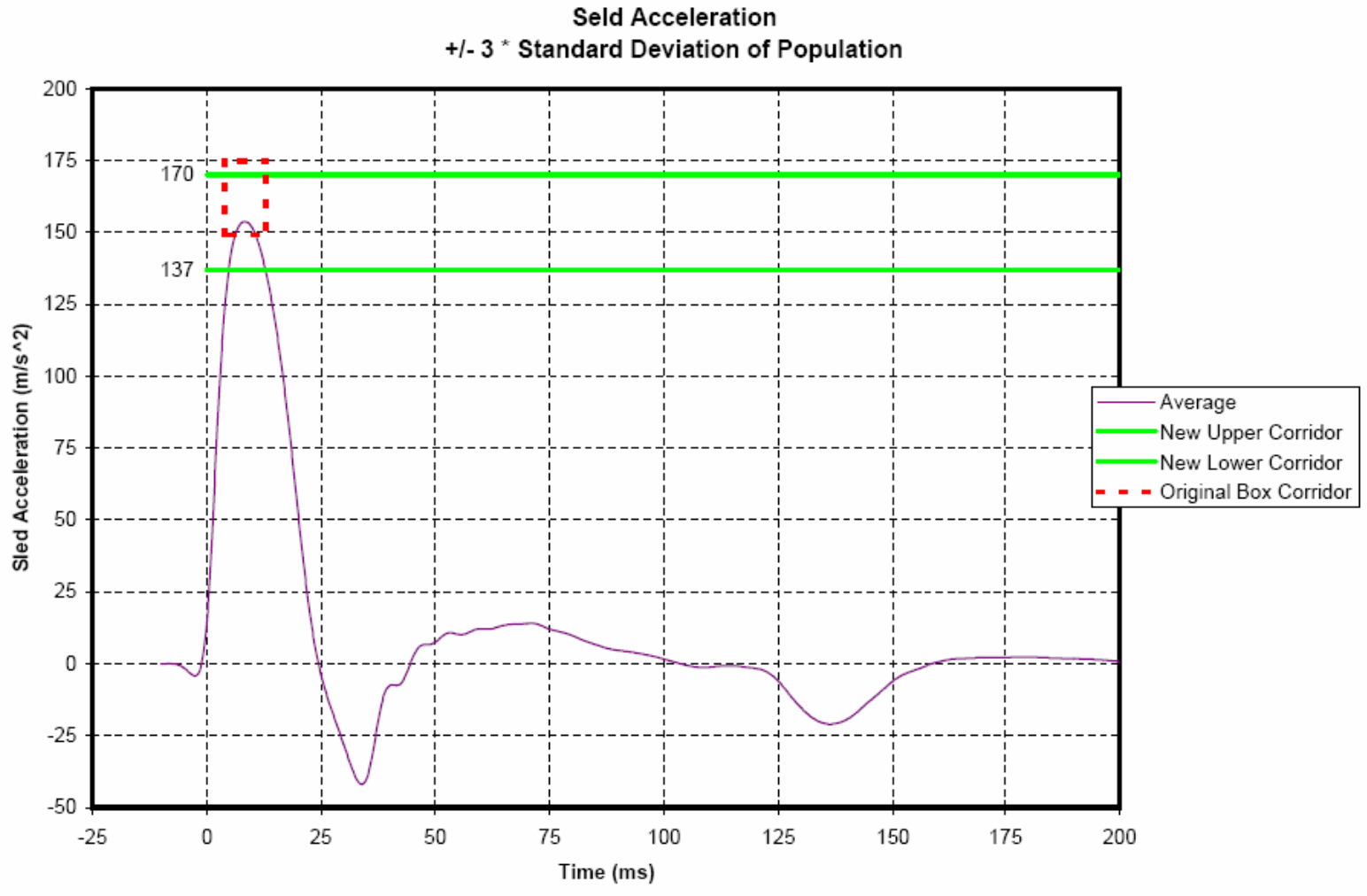
Sled Acceleration Limits



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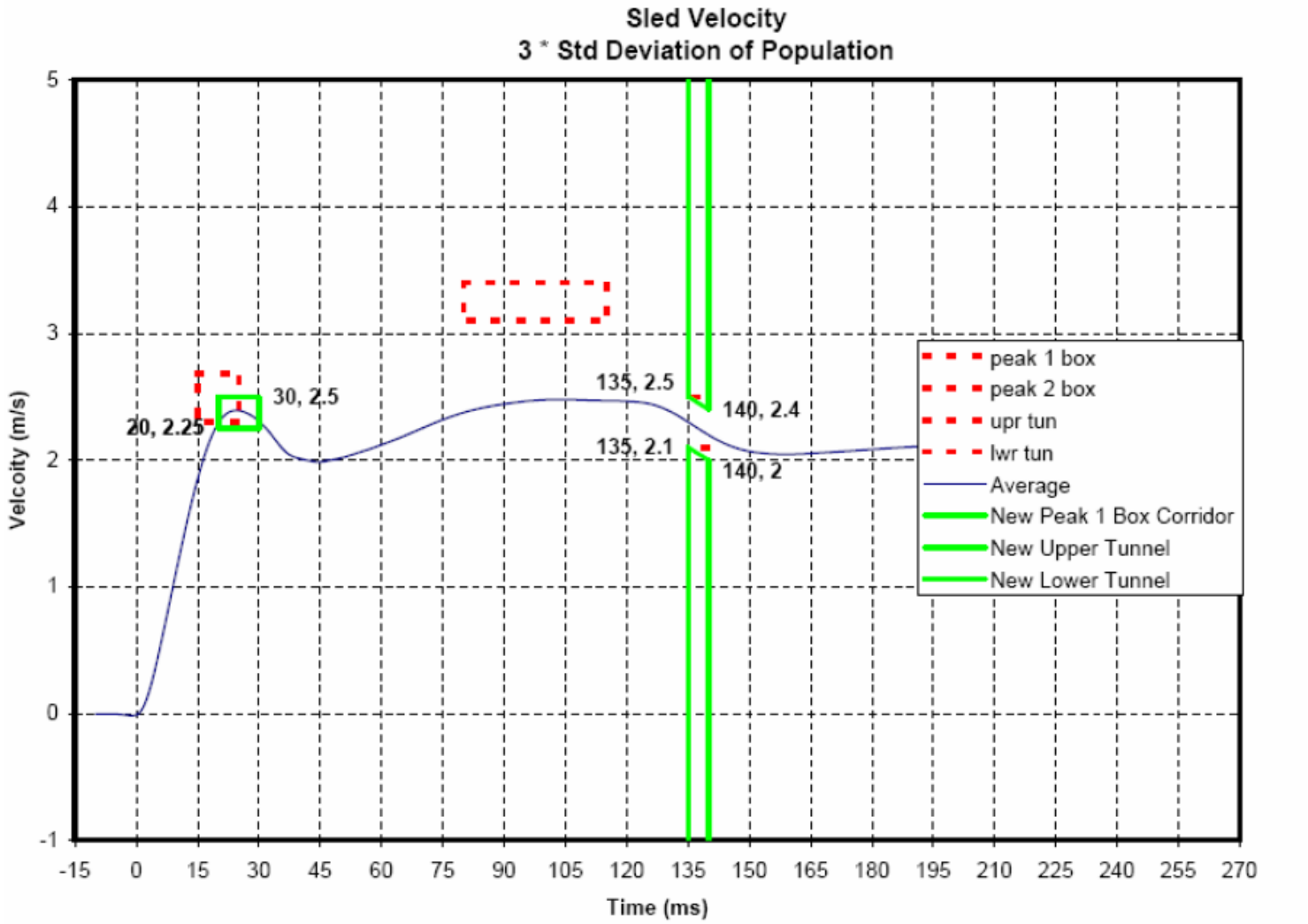
Sled Velocity Corridors



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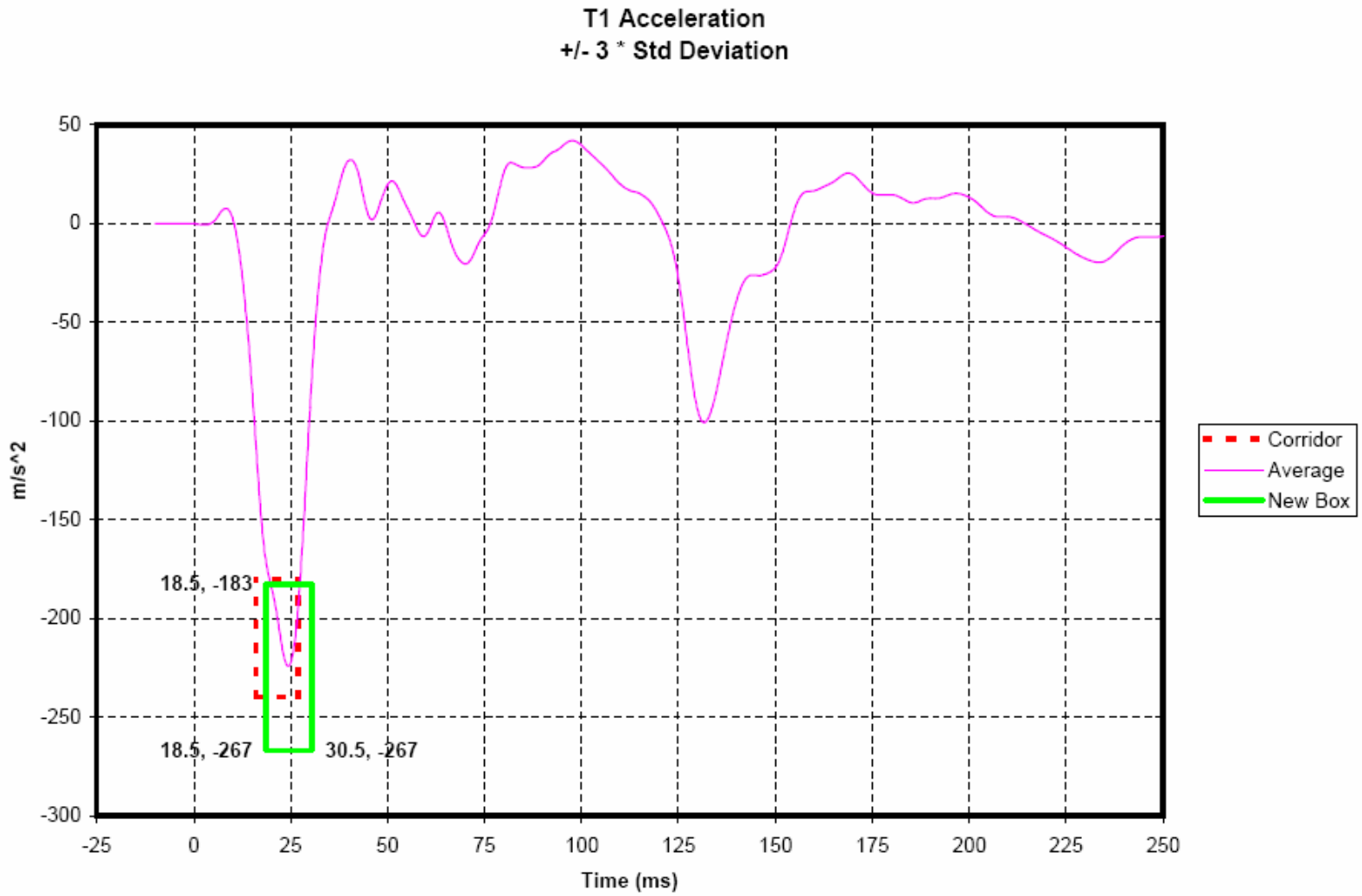
T1 Corridor



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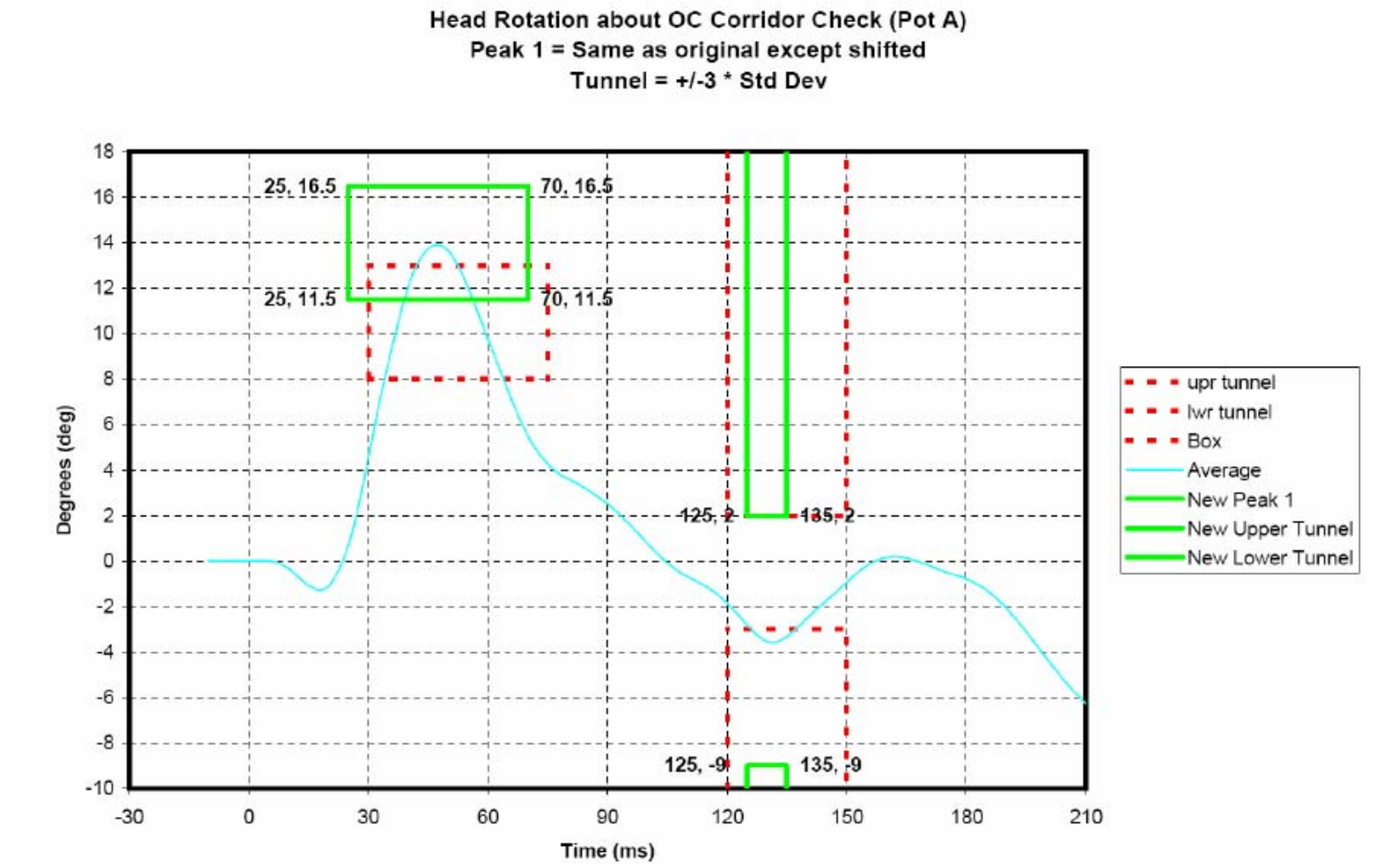
Pot A Corridor



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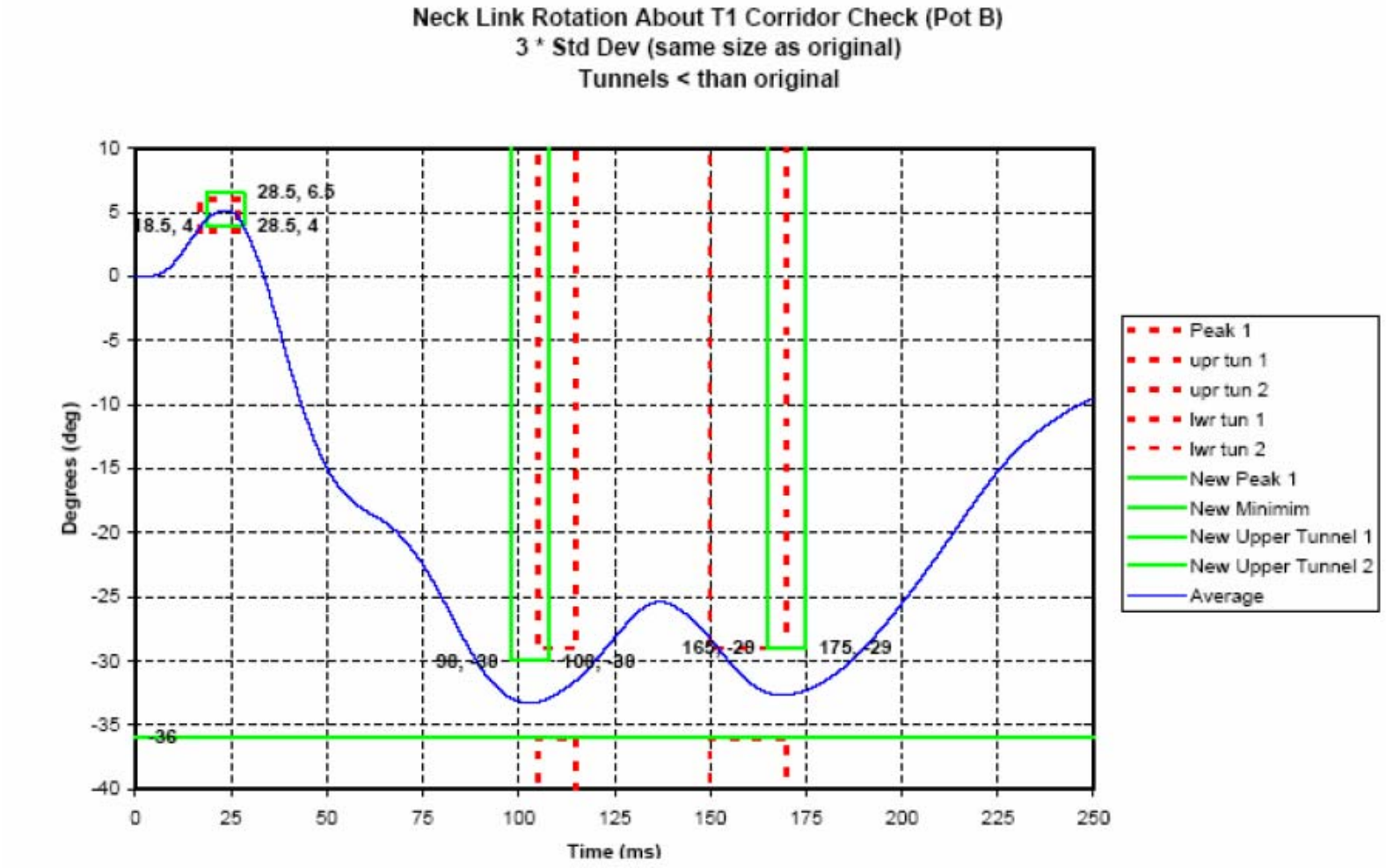
Pot B Corridors



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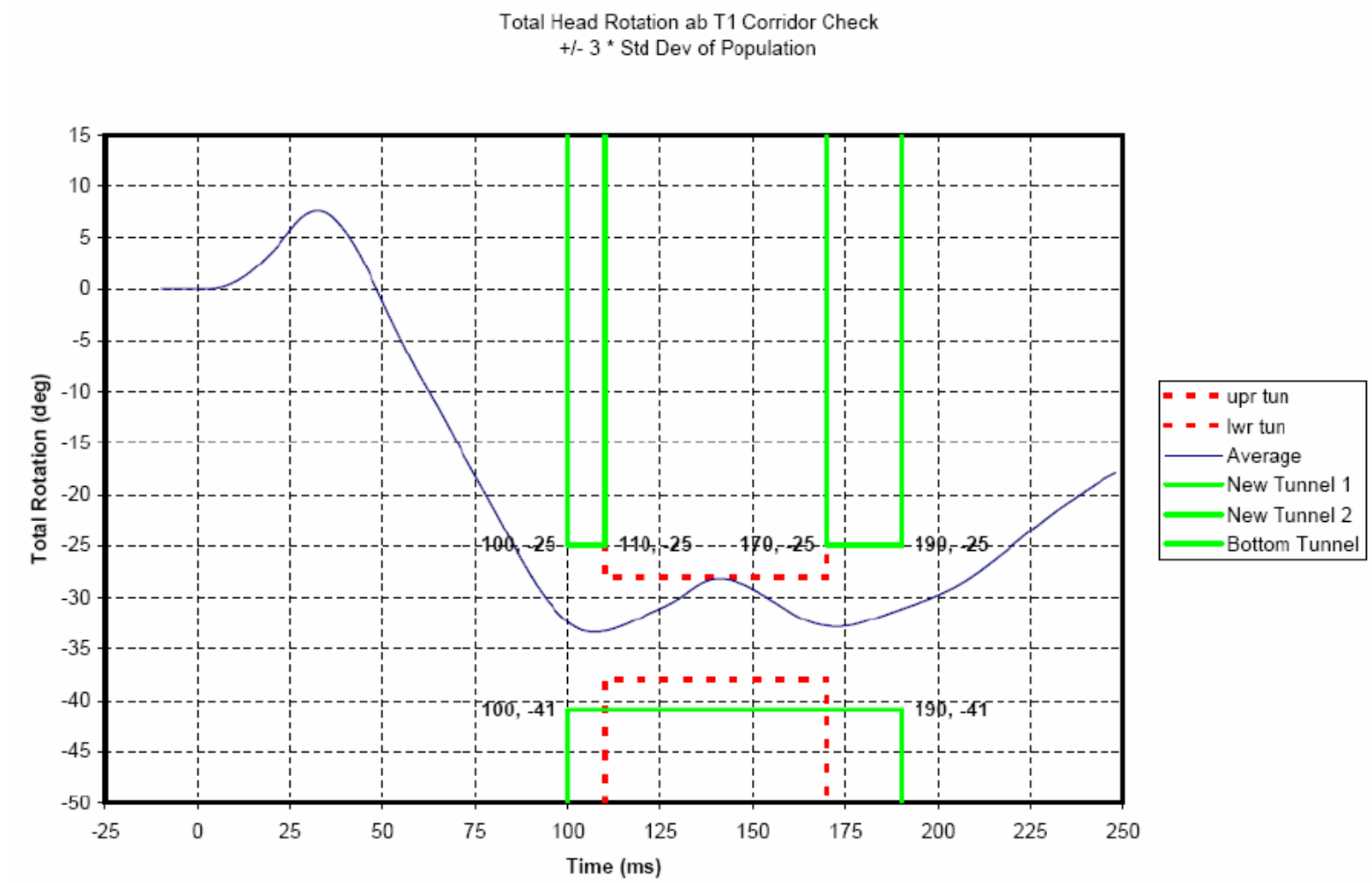
Total Neck Rotation (A + B)



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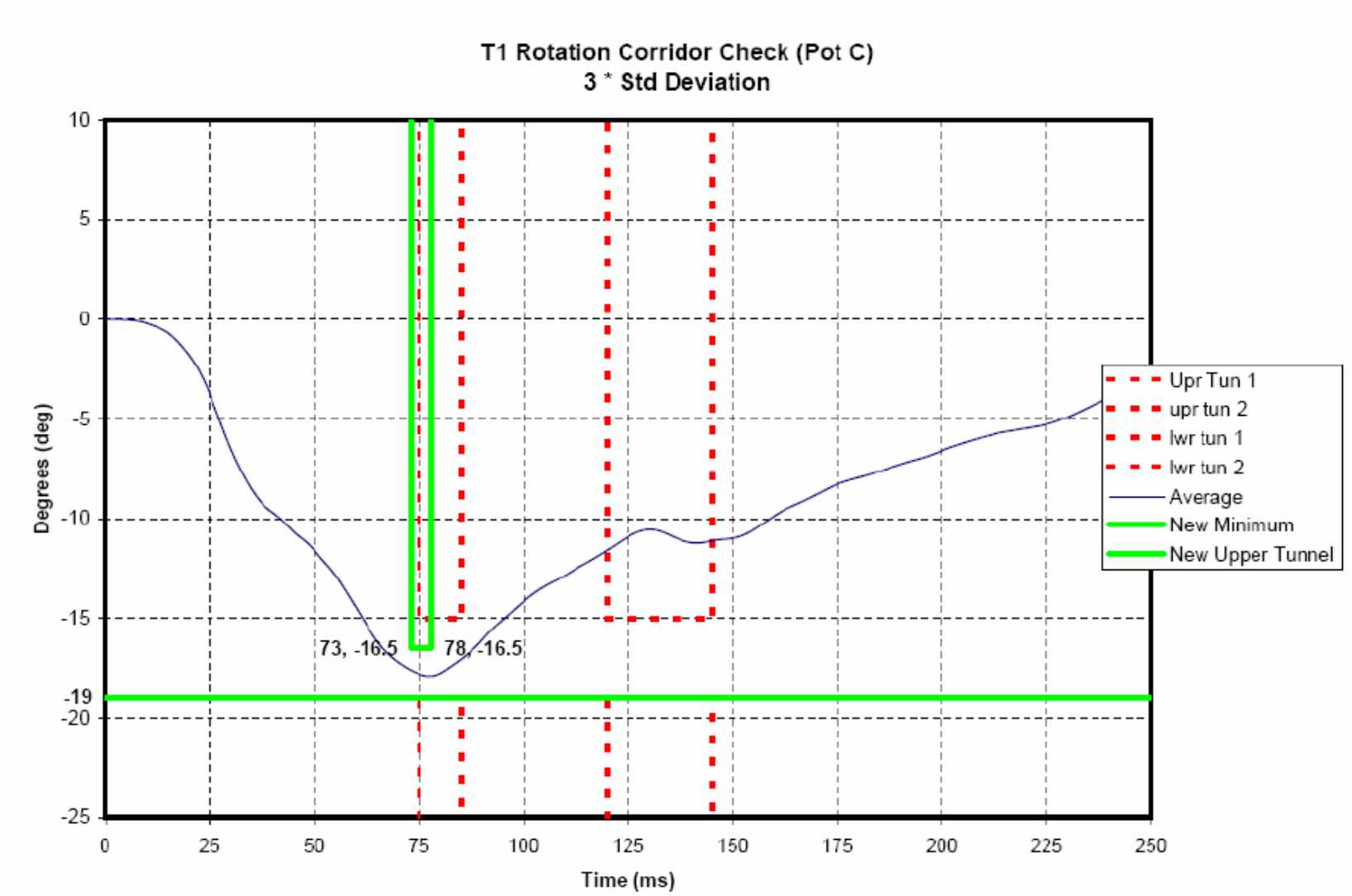
Pot C Corridors



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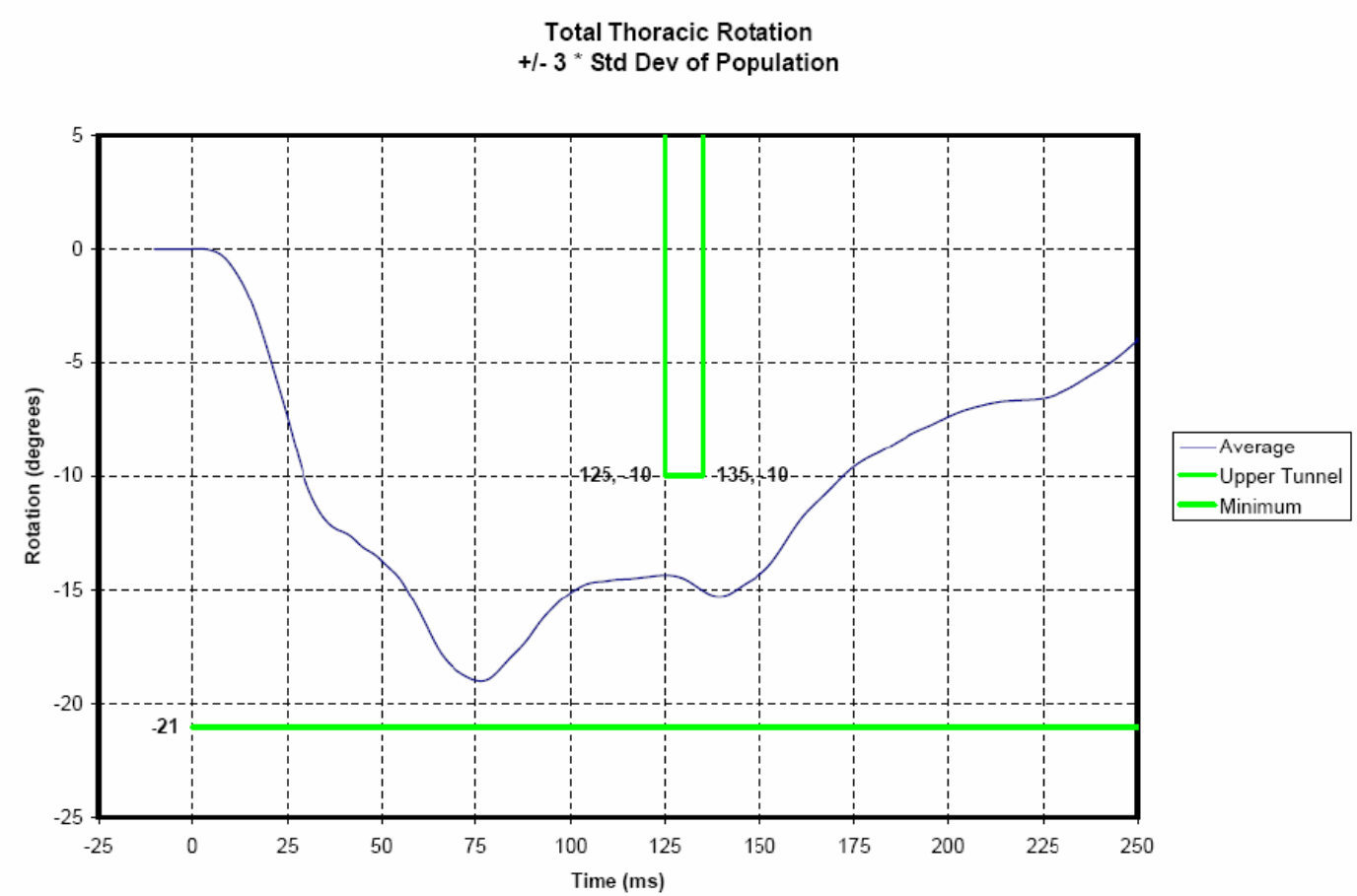
Total Thoracic Corridors (Pot C + D(D is a new pot)



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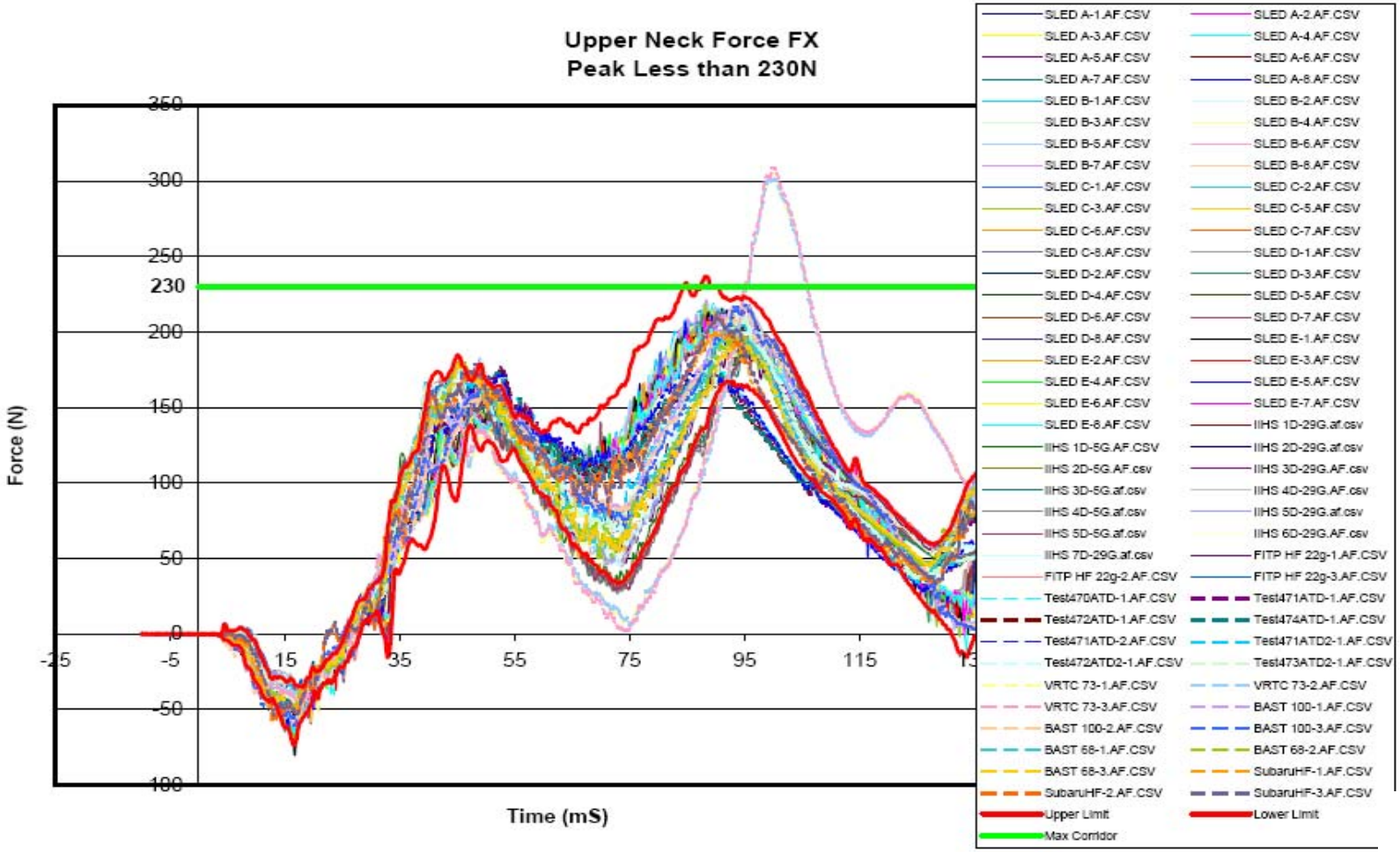
Neck Fx Limit



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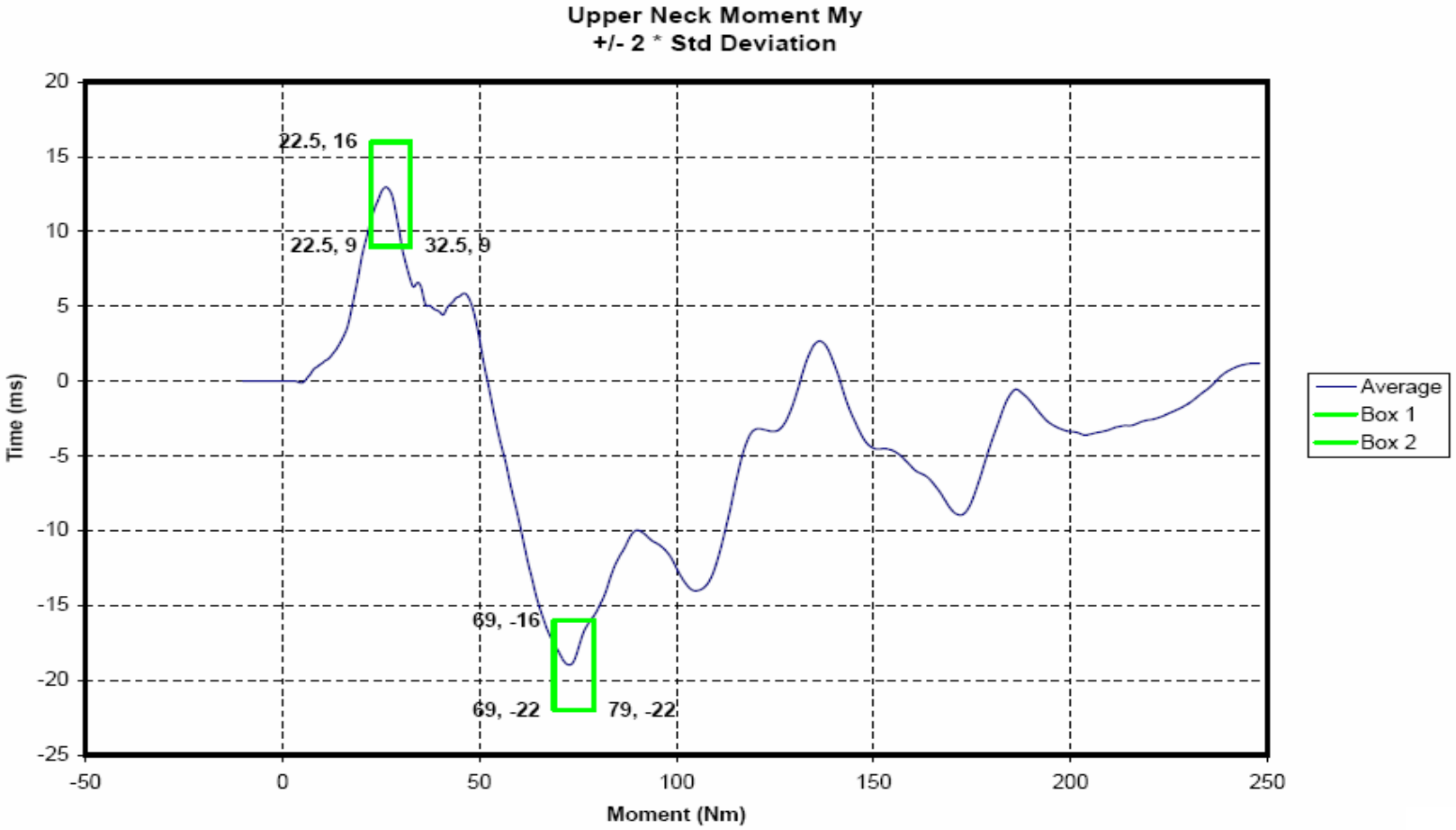
Neck Moment My Corridors



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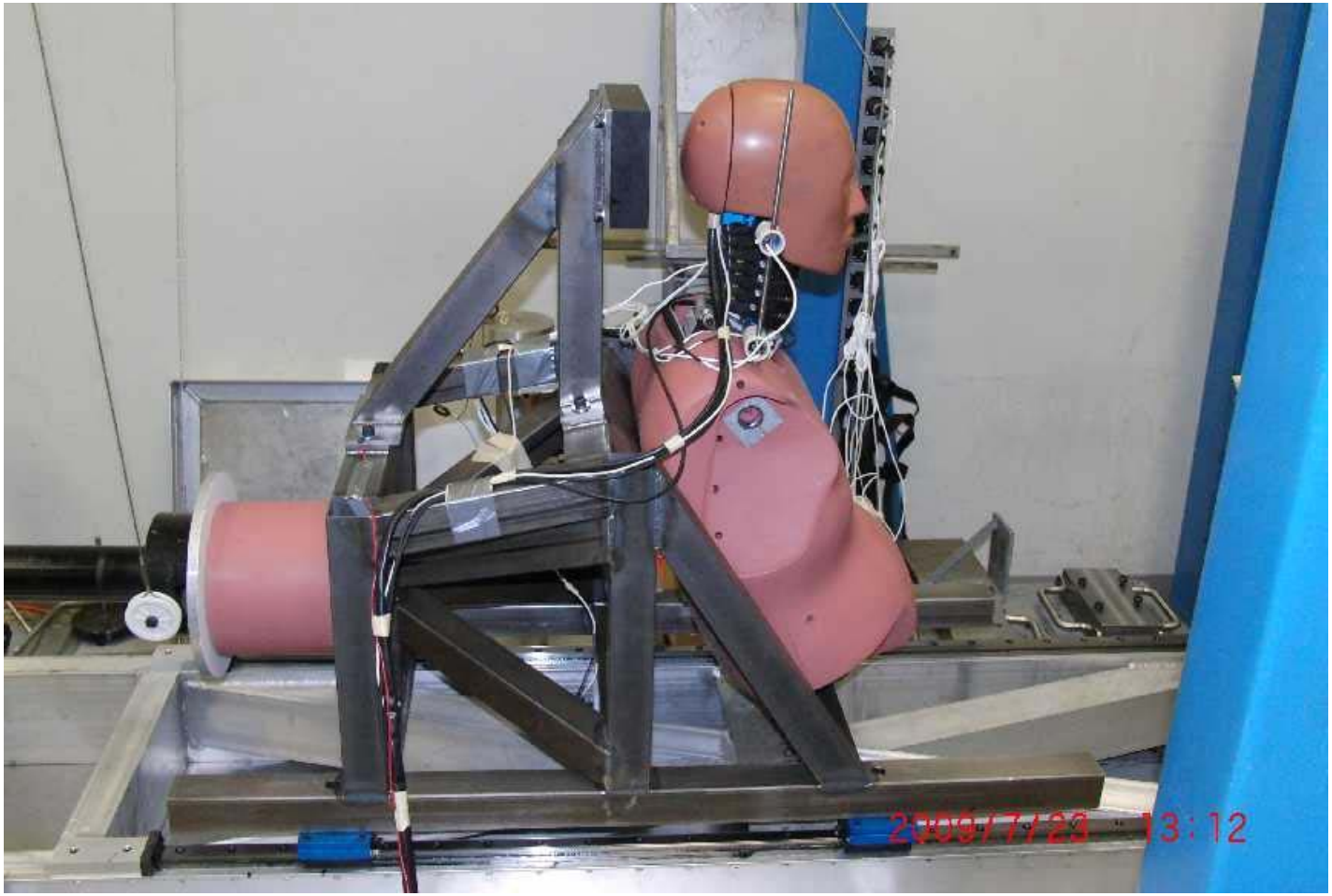
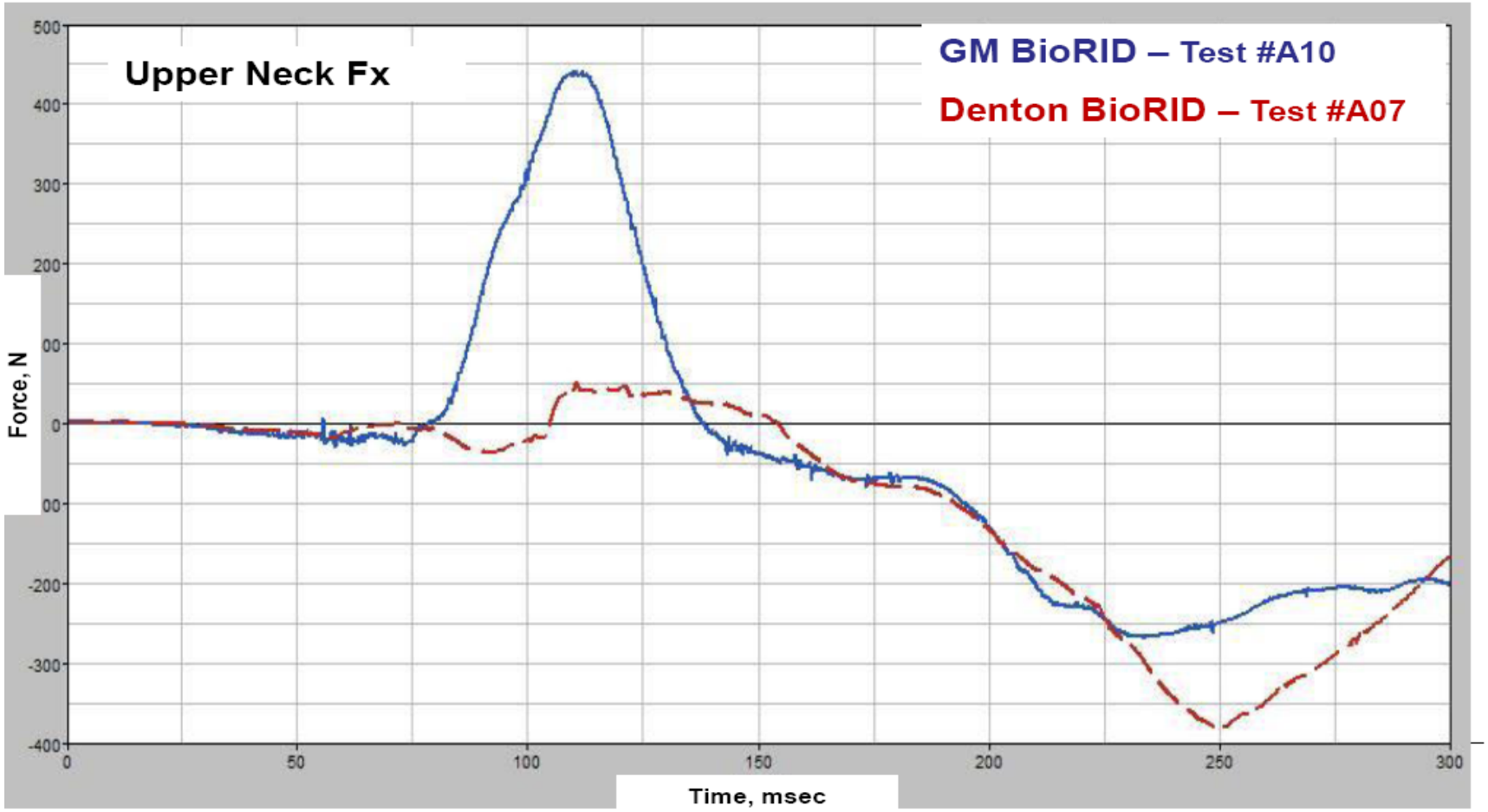
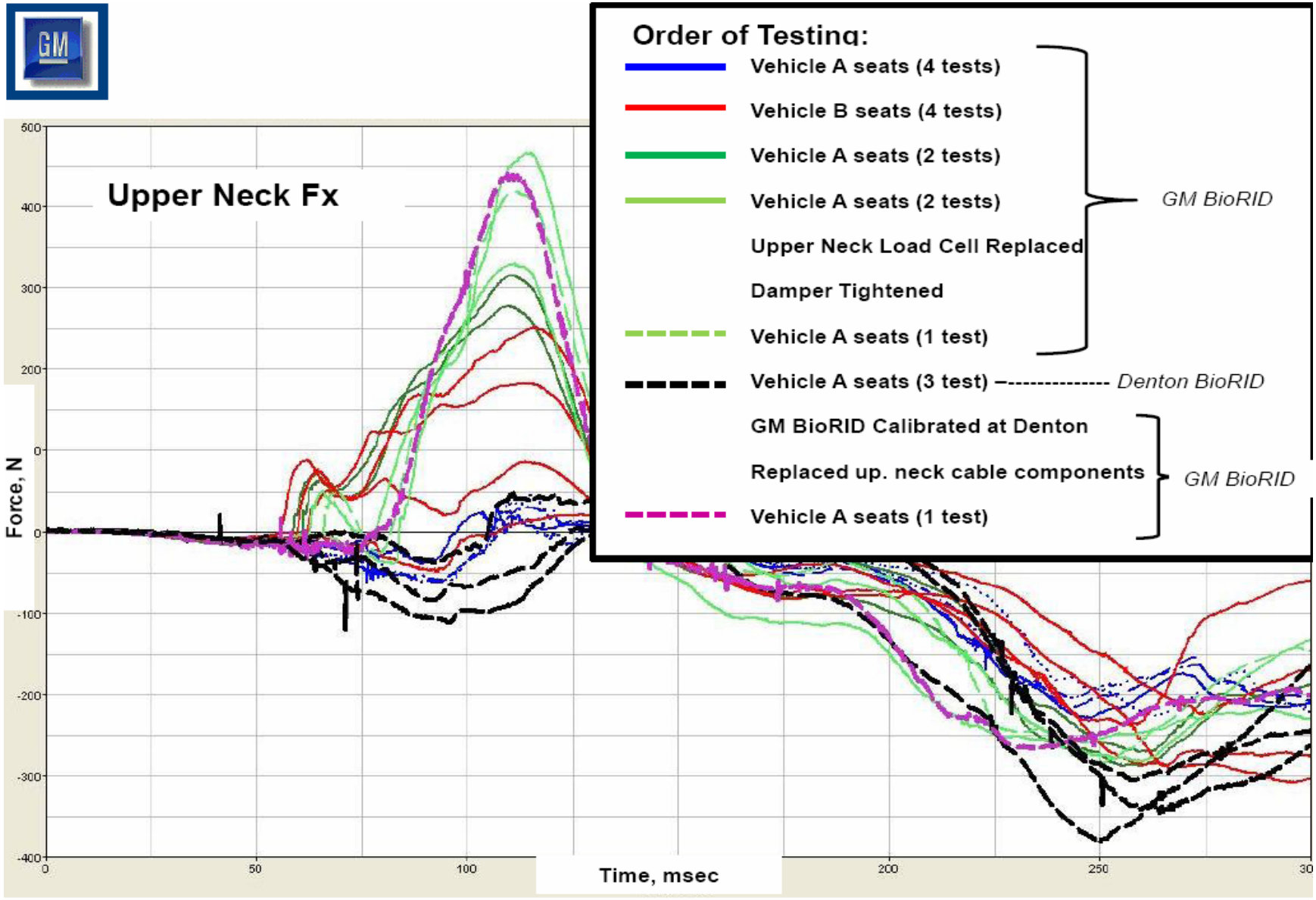
HEAD REST SLED TEST Development



GM Fx Discovery

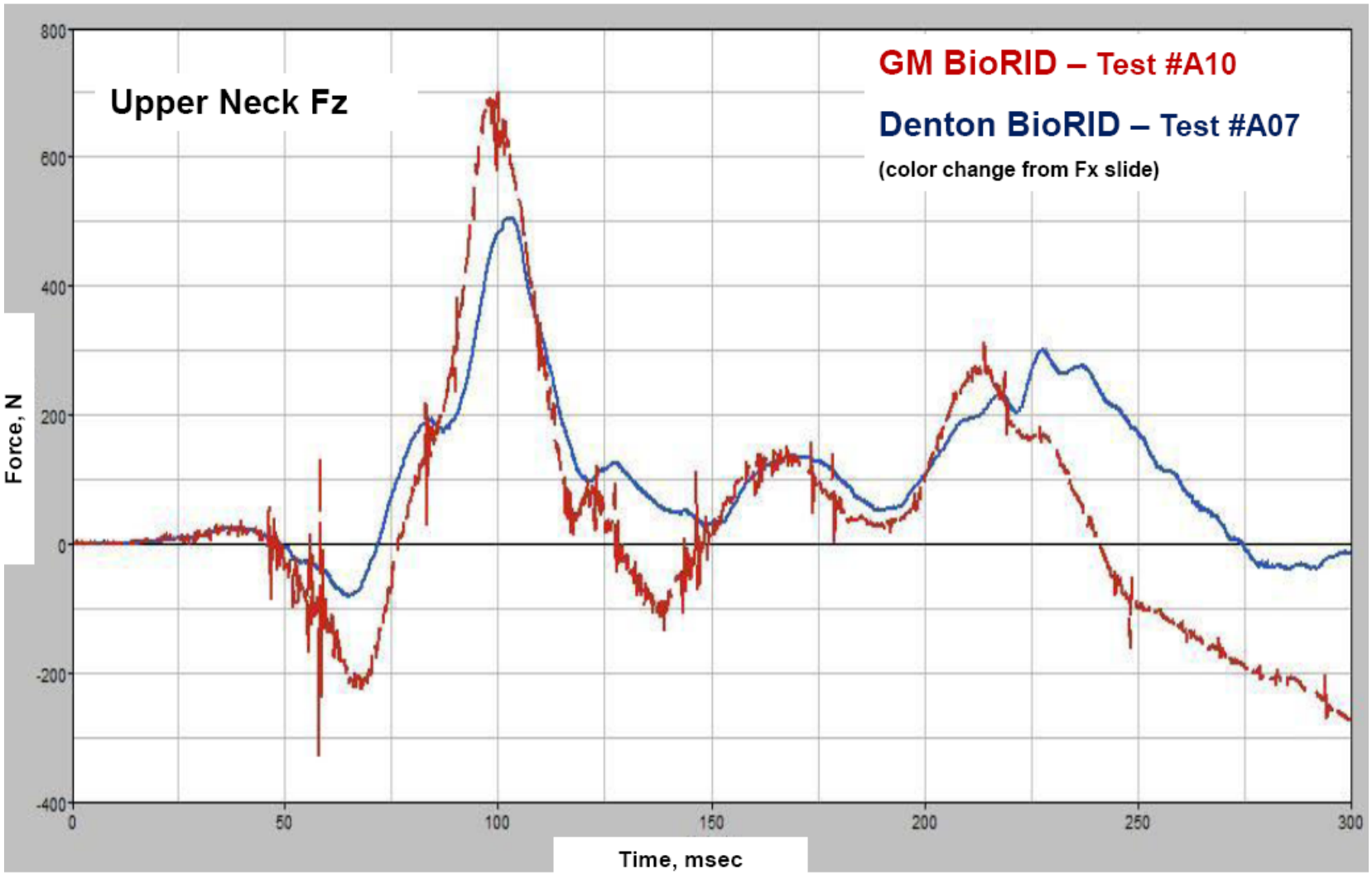
Issue: Two different BioRID dummies yield significant different upper neck Fx waveforms in sled evaluations of same seat.

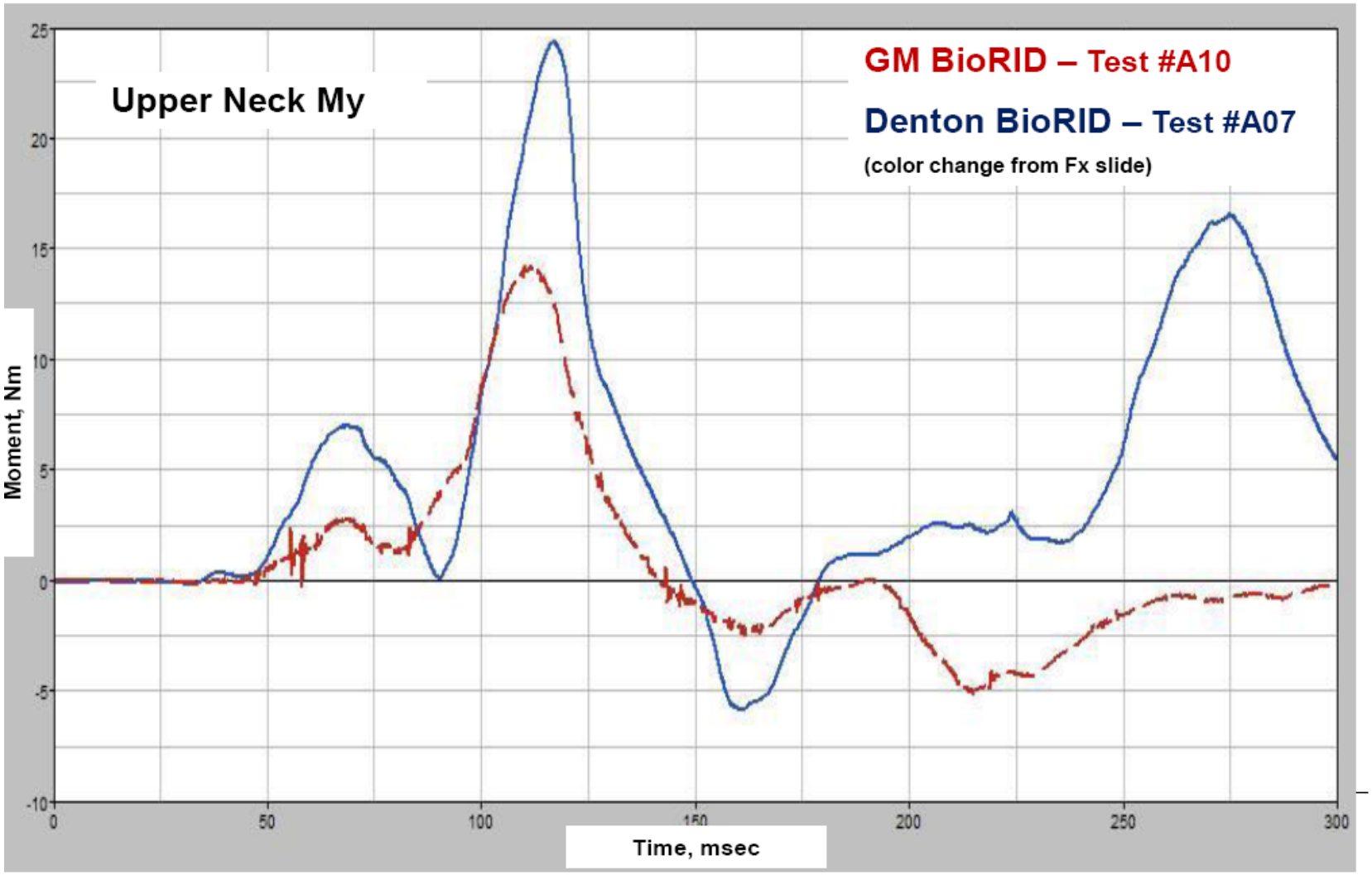



Upper Neck Fx
Order of Testing:
Vehicle A seats (4 tests)
Vehicle B seats (4 tests)
Vehicle A seats (2 tests)
Vehicle A seats (2 tests)
Upper Neck Load Cell Replaced
Damper Tightened
Vehicle A seats (1 test)
GM BioRID
Vehicle A seats (3 test)
Denton BioRID
GM BioRID Calibrated at Denton
Replaced up. neck cable components
Vehicle A seats (1 test)
GM BioRID
Force, N
Time, msec
500
400
300
200
0
-100
-200
-300
-400
0
50
100
200
250
30

Status:

- GM BioRID under further review at Denton ATD
- Calibration test appears unable to identify ATD problems

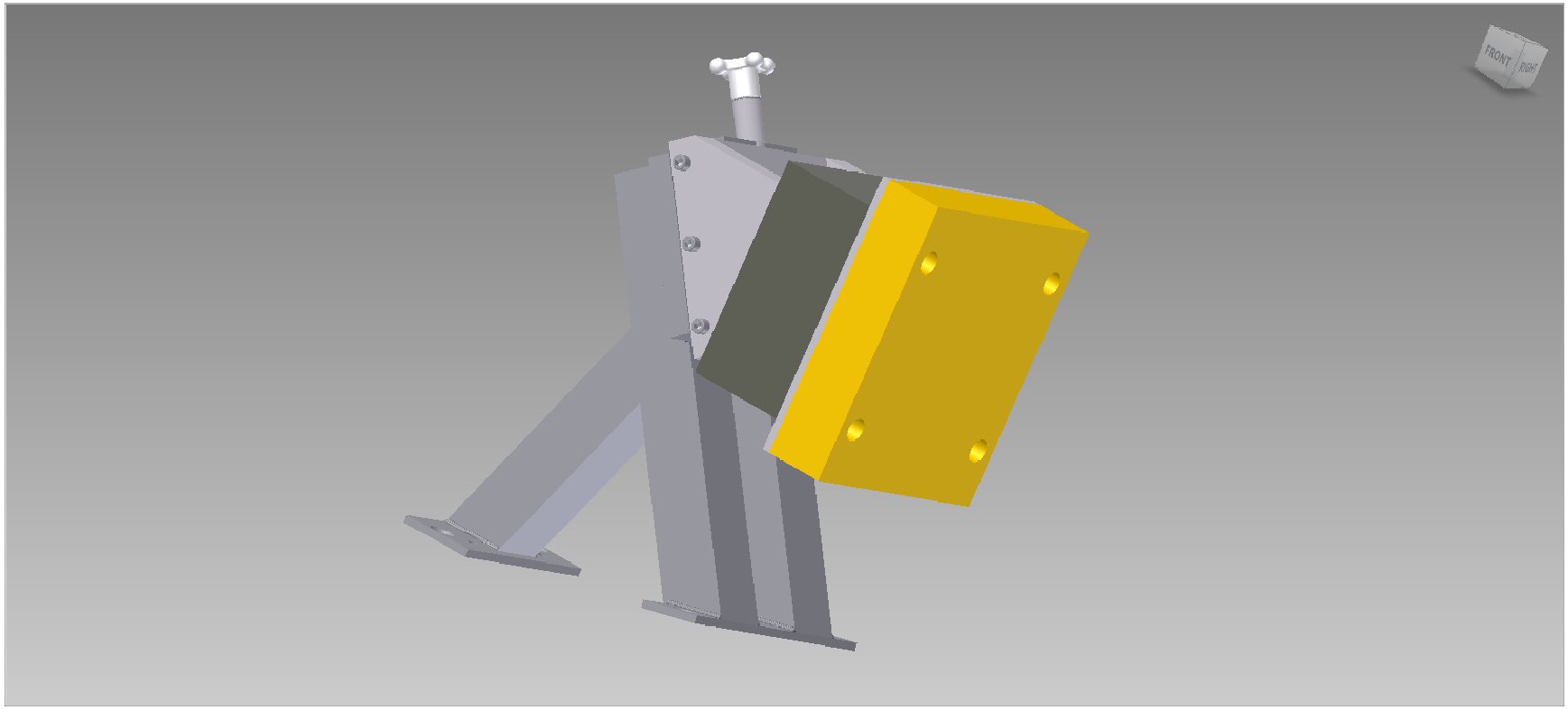

Upper Neck Fz
GM BioRID – Test #A10
Denton BioRID – Test #A07
(color change from Fx slide)
Force, N
800
600
400
200
0
-200
-400
0
50
100
150
200
250
300
Time, msec


Upper Neck My
GM BioRID – Test #A10
Denton BioRID – Test #A07
(color change from Fx slide)
Moment, Nm
Time, msec
25
20
15
10
5
0
-5
-10
0
50
100
150
200
250
300

List of Test Investigations

- Fx Variation Study (Foam Head rest test)
- Meet with Ford to review their results
  - March-April 2010
- Cable Loads, dynamic and static
  - April – May 2010
- Static spine set up effects
  - May – June 2010
- Jacket Stiffness
  - First Phase Complete
- Head Weight, MMI
  - July 2010
- Tolerance Items from drawing package review
  - May 2010

Foam Head Rest Design



Drawing Review

- Denton and FTSS continue review of drawings to create the GTR drawing package.
  - GTR Title Block
  - Metric dimensions
  - Generic material specifications