What is a Traverse?
Who is Traversing?

• National Science Foundation
• CH2M Hill Polar Services
• Cold Regions Research & Engineering (CRREL)
* Dartmouth U. robotics students
Where are we going?

Thule 76°31'55.19"N, 68°42'10.81"W • NEEM 77°30'0.00"N, 50°52'0.12"W • Summit 72°34'12.00"N, 38°28'48.00"W
Summit Station
Why Traverse?

• Lower environmental impact
• Suggested by DPC in 2004, Kangerlussuaq to Summit
• Fewer cargo constraints: Size, weight, availability
• Lower cost
• Other potential benefits to science
Why Traverse From Thule?

• Far North location
• Access to icecap
• Excellent cargo hub & support capabilities
• History of traversing (Camp Century/Heavy Swing)
How will we do it?
Ground Penetrating Radar (GPR)

Base of Snow Bridge

Crevasse
Crevasses
Cravasse Self-Rescue Training
Snow Machines
Sled Structures
Case Quadtrac
Fuel Bladder Sleds
Tucker with GPR
Dartmouth Robotics
Method of Operation

- Sequential camps as the team moves up the glacier
- Tent camping
- Stop at NEEM where 2 team members depart
- 3 team members continue to Summit Station
- Return to Thule in June
- Future plans
08 GRIT Team

- Brad Johnson, Team Leader & Explosives Expert
- Pat Smith, Mechanic
- Allan Obannon, Mountaineer & Medic
- Jim Lever, Mobility Expert
- Allan Delaney, GPR Expert

Thule Support Group

- Jay Burnside, Project Manager
- Jason Weale, Mobility Engineer
- Susan Zager, Thule Liaison
- Larry Levin, Tech Specialist
- Tracy Dahl, Tech Specialist
- Brian Buckley, Carpenter
- Jim Latshaw, Carpenter
- Kevin Olds, Robotics Student
- Eric Trautman, Robotics Student
Alternative Crevasse Detection
2008 Challenges

• Short planning time
• Permits
• Explosives
• Poor snow conditions
• High GP vehicle = very limited mobility
• Deep ruts
• Side hills & down hills
• Snow buildup between sleds
• No good way to carry cargo
• Slush flows
2008 Accomplishments

- Pioneered a safe route to Summit
- Delivered 4156 gal fuel to NEEM
- Delivered 2587 gal fuel fuel to Summit
- Identified problem areas to address
- Determined how to work in Thule
2009 Accomplishments:
- Mobility testing with load cell
- Tested different sled materials
- Some now structure modification work
- Identify ideal tractor weight, power and PSI ground pressure
- CRREL Report pending
What’s Next?

Identify and procure equipment
Define operational strategy
Get er’ done
Questions?