A map of Canada showing the distribution of GPS and bench mark (BM) network points. Yellow stars represent GPS stations, and small grey squares represent bench marks. The points are densely clustered in the southern provinces and sparsely distributed in the northern regions. The title "GPS on BM Network a.k.a. The 'Supernet'" is overlaid in red text.

GPS on BM Network a.k.a. The "Supernet"

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Geodetic Survey Division, Natural Resources Canada

Presented to the
Canadian Geodetic Reference System Committee
Ottawa, April 26, 2001



Natural Resources
Canada

Ressources naturelles
Canada

A map of Canada with numerous small square and star markers distributed across the landmass, representing survey points or data locations. The text and list are overlaid on this map.

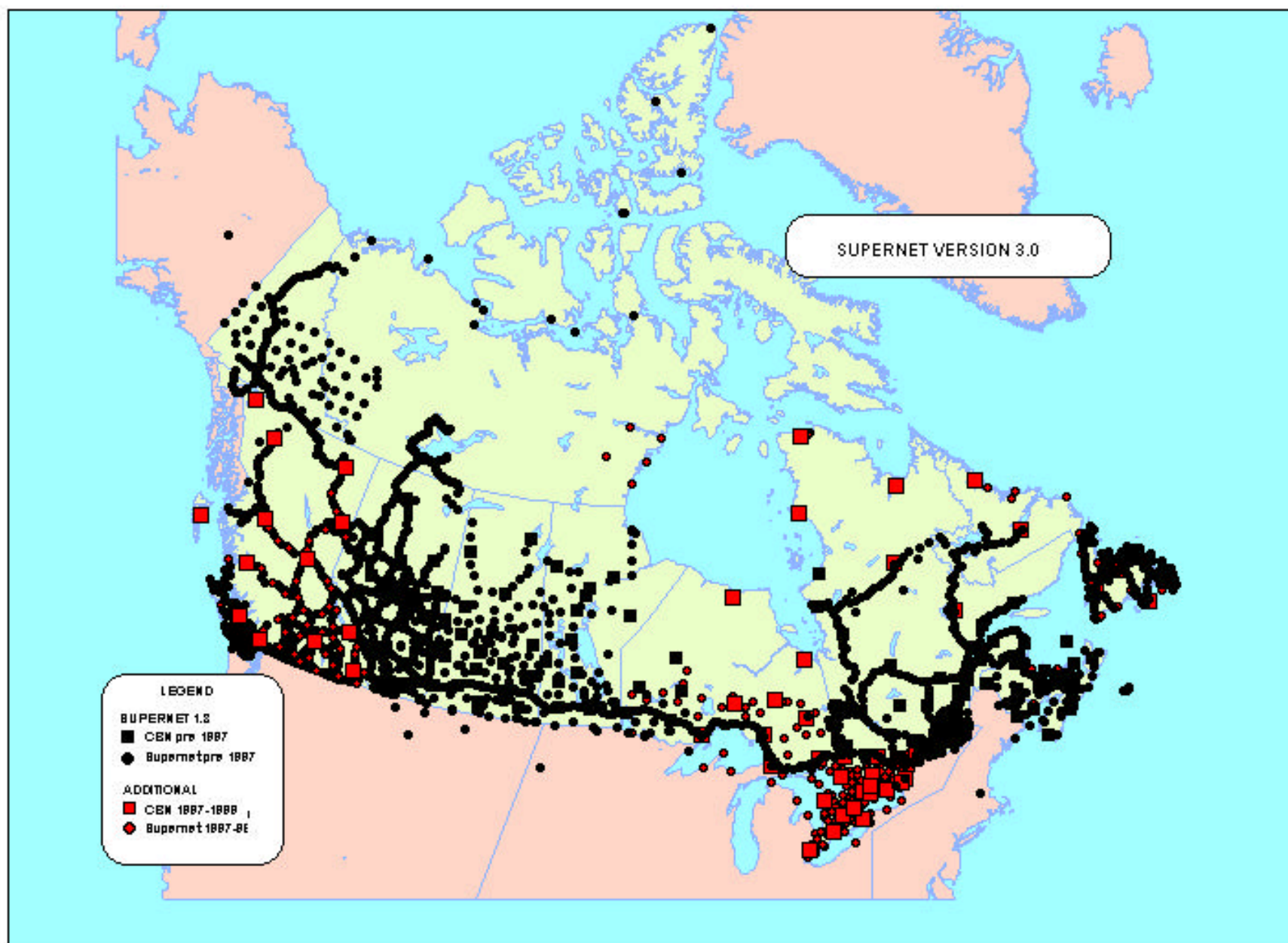
Purpose

- Ellipsoidal–orthometric height transformation (HT)
- Testing & refinement of the geoid model
- Reconciliation of CHS chart datums ??

Version 3.0

- Latest available (on CGRSC data archive)
- Integrated into CBN 3.0





New Solutions

- *Version 3.1 – Available soon*
 - To be integrated into CBN 3.1
 - New projects
 - CBN 2000 (northern CBNs and BMs)
 - Eastern validation networks (few BMs)
 - **GPS on BM in N. Yukon → most important contribution**
- *Future Solutions to include*
 - CHS GPS at tide gauges along St. Lawrence in 2000
 - GPS projects from provinces (NF, QC, AB)



Requirements

- Static surveys since about 1993
- Occupation of primary vertical control benchmarks (consult with Marc or Andre for other benchmarks)
- Short to medium length baselines (preferably less than 30 km)
- Occupation times of at least 2 hours, preferably at least 3 to 6
- Multiple occupation of benchmarks in same or other GPS surveys
- IGS precise orbits; broadcast orbits also acceptable for short lines
- Session GPS processing, or all possible single baselines, preferred
- 95% confidence regions of the order of 5 cm or less in vertical
- Adjusted ellipsoidal coordinates (GHOST code 4 or GeoLab PLH format)
- GHOST (INTCOBS) or GeoLab (IOB) input observations file
- Auxiliary information (Survey description, GPS software, integration method)

