Standards

EDM Baselines
GPS Validation Networks
Accuracy Standards

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GPS Validation Networks

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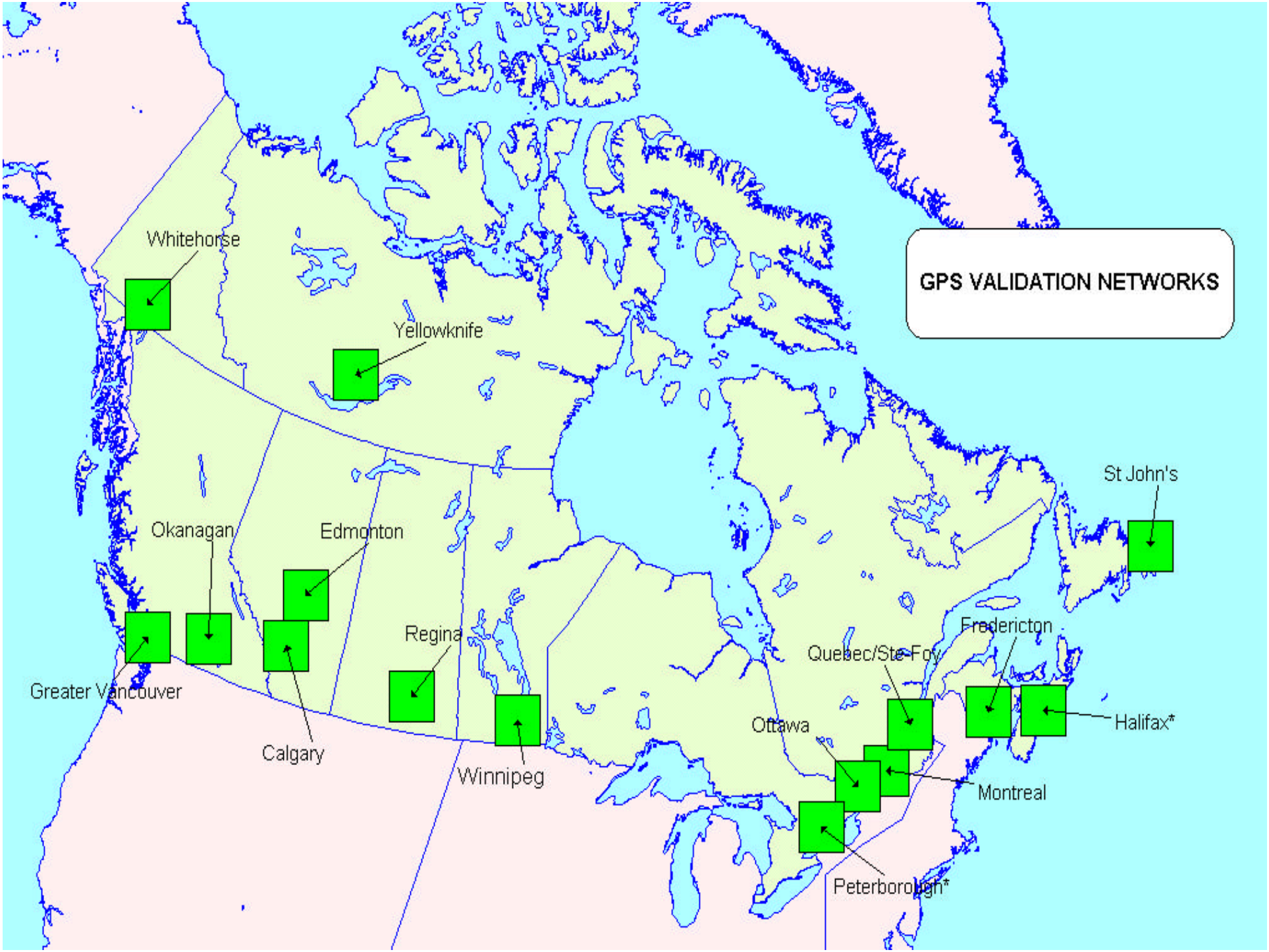
GPS VALIDATION NETWORKS
Whitehorse
Yellowknife
St John's
Okanagan
Edmonton
Regina
Fredericton
Quebec/Ste-Foy
Greater Vancouver
Calgary
Winnipeg
Ottawa
Halifax*
Montreal
Peterborough*

GSD Position

- Bring all validation networks to CBN standard
  - Precise orbits & three 24 hr occupations
- Update booklets
  - Make available to provinces for distribution
- No further measurements
  - Except for points that are part of CBN

Status

- CBN Quality
  - 9 meet CBN standards – 5 measured in 2000
  - 6 in West do not – to be measured in 2002

    Regina Okanagon Whitehorse

    Edmonton Vancouver Yellowknife
- Booklets
  - Halifax & Peterborough still outstanding
  - Others to be updated with recent reobservations

EDM Calibration Baselines

Larry Hennessey, Mike Craymer


Calibration Baselines
Whitehorse
Yellowknife
Prince George
Grande Prairie
Edmonton
Vancouver West
Vernon
Calgary
Saskatoon
Victoria
Surrey
Cranbrook
Lethbridge
Regina
Winnipeg
Thunder Bay
Chicoutimi/St-Hon
U Laval/Ste-Foy
Neuville
Port Cartier
Mont-Joli
St. John's
Summerside
Moncton
Port Hawkesbury
Trois-Rivières
Val d'Or
Halifax
Lawrencetown
Fredericton
Ottawa NGBL
St Leonard
Lindsay
Barrie
Terrebonne
Montreal/Chambly
Belleville
Mississauga
London
Burlington

Measurements

- 2000 (part of 5 yr. cycle)
  - ✓ Halifax
  - ✓ Winnipeg
- 2001
  - Saskatoon (5 yr. cycle)
  - Yellowknife (5 yr. cycle; only baseline in NWT)
  - Edmonton (Alberta's selection for primary baseline) – will be in the area

GSD Position

- Reduce number of baselines maintained by GSD
  - From 44 to one per province/territory
  - To be selected in consultation with province
    only Alberta has replied
- Additional baseline measurements
  - As requested by province
  - On a cost-sharing basis

GSD Recommendations

- ✓ NF – St. John's
- ? NS – Halifax
- ? NB – Nothing stable
- ? QC – Quebec City
- ? ON – Belleville
- ✓ MN – Winnipeg
- ? SK – Saskatoon
- ✓ AB – Edmonton
- ? BC – Surrey
- ? YK – No linear baseline
- ✓ NWT – Yellowknife
- ? NV – None available
- ✓ PEI – Summerside

Accuracy Standards

- Network (“absolute”) accuracy
- Local (relative) accuracy
- Implementation

Network Accuracy

- A measure of “absolute” accuracy
  - Relative to reference frame origin (datum point)
  - Measures accuracy of integration
- Definition
  - Horz: Major axis of absolute 95% conf. ellipse
  - Vert: Absolute 95% conf. Interval
  - Worst case measures

Local Accuracy

- A measure of relative accuracy
  - Relative to other stations in “neighbourhood”
- Definition:
  - As for network accuracy but using relative conf. Regions
  - Based on absolute units, not relative (e.g., ppm)
    - GPS error dominated by constant error

Implementation

- Added to new version of GHOST
- Network ("absolute") accuracy
  - Must ensure accuracies propagated from reference frame (weighted station adjustments)
- Local ("relative") accuracy
  - Local "neighbourhood" not uniquely defined
  - Still investigating most appropriate ones
    - GHOST: Connected sta, adjacent sta, radius, file of sta

Discussion

- Is anyone adopting these standards?
- Need for accuracy standard
  - Classification & survey specs only?
  - Is local accuracy really needed?
- Can a unique definition of local neighbourhood be standardized?
  - Will it satisfy all users?