

Erratum 1 - Pre Feasibility Telecommunications Study

High Capacity Network Options in Nunavik

- a) Add the following sentence at the end of point 7, page 5 - ***It may also be possible to implement a microwave solution to meet the KRG 2021 traffic requirements. This would require an upgrading of the equipment used in this report, and require larger shelters at each site.***
- b) Replace table C with new table C on page 6. Changes are shown in italics.

Summary of comparison

Optical Fibre	Microwave Towers	High Speed Satellite
Very low latency	Low latency	High latency
High maximum capacity	<i>Moderate</i> capacity	Moderate capacity
Symmetrical (upload and download capacity are equal)	Symmetrical (upload and download capacity are equal)	Asymmetrical (upload capacity is lower than download capacity)
Very high availability	<i>High</i> availability* (<i>assuming that a network "ring" configuration is in place</i>)	High availability* (<i>assuming that different satellites are used for Ka-band and C-Band respectively</i>)
Lifespan 20-30 years	Lifespan 20 years	Lifespan 15-20 years
Inexpensive to upgrade beyond 2021 goal	<i>Increased</i> cost to upgrade beyond 2016 goal	High cost to upgrade beyond 2021 goal
Longer time to build (~4 years) (environmental assessment for land and water)	Moderate time to build (~3 years) (environmental assessment for land)	Shorter time to build (~2 years) (no environmental assessment expected)
Interconnection is expensive (transport from Chisasibi/Schefferville to south)	Interconnection is expensive (transport from Chisasibi/Schefferville to south)	Interconnection is inexpensive (gateway is in the south)

* Availability is defined as the overall system availability as per International Telecommunications Union (ITU) Reference documents G827

- c) Table entitled Costs and Timeframe on page 7, under section All Microwave, replace "Did not meet all criteria" with "***For KRG 2016 needs.***"
- d) Replace with second and third paragraphs on page 22 with the following. Changes are identified in italics.

The design is based on a total capacity of 1.3 Gbs. ***It is possible to get up to 8Gbps by reusing the same towers and adding additional batteries, solar panels, wind turbines and increasing the shelter size. Additional capacity would require a multi-channel radio architecture. Cost estimates are provided only for the first option.***

A key parameter for microwave radio design is radio path planning. This determines the overall performance of the microwave system, and provides the location, and heights, of the radio towers. ***A fade margin of 30db has been factored included in the system design to ensure high path reliability.***

- e) On page 44 under CONCLUSION, add item ***b)***. ***It may be possible to use microwave radio to meet the KRG 2021 traffic requirements***