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November 17, 2016

Filed Electronically
Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

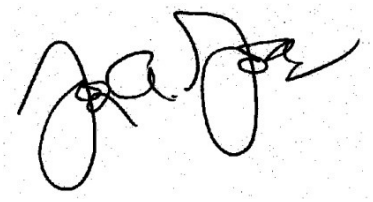
Re: Notice of *ex parte* presentation
Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat's NGSO Constellation
File No. SAT-LOI-20161115-00108

Dear Ms. Dortch:

On November 15, 2016, Henry Goldberg and the undersigned, as counsel to Telesat Canada ("Telesat"), and Daniel S. Goldberg, Michael Schwartz, Dave Wendling, and Elisabeth Neasmith of Telesat, met with Mindel De La Torre, Troy Tanner, Jennifer Gilsenan, Jose Albuquerque, Karl Kensinger, Kerry Murray, Chip Fleming, and Kathyrn Medley of the International Bureau concerning the above-referenced application for U.S. market access for Telesat's NGSO constellation. At the meeting, the Telesat representatives discussed the points addressed in the attached slides.

Please direct any questions concerning this filing to the undersigned.

Respectfully submitted,



Joseph A. Godles
Attorney for Telesat Canada

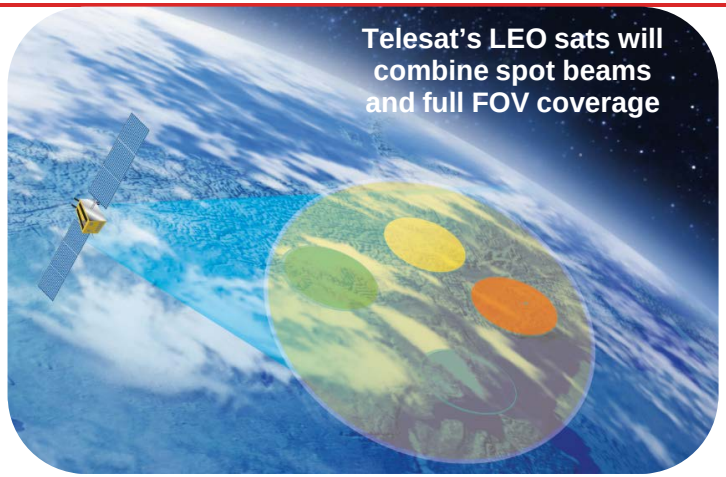
cc: Mindel De La Torre
Troy Tanner
Jennifer Gilsenan
Jose Albuquerque
Karl Kensinger
Kerry Murray
Chip Fleming
Kathyrn Medley

Overview of NGSO System

November 15, 2016

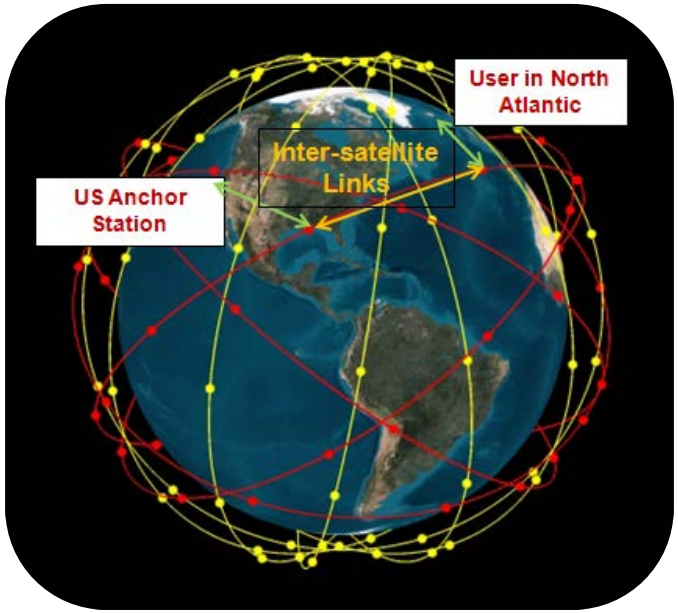
Overview

- Global constellation consisting of a minimum of 117 interconnected NGSO satellites (plus spares)
- Users connect to satellites via high-throughput spot beams
  - Satellites also have full field-of-view coverage



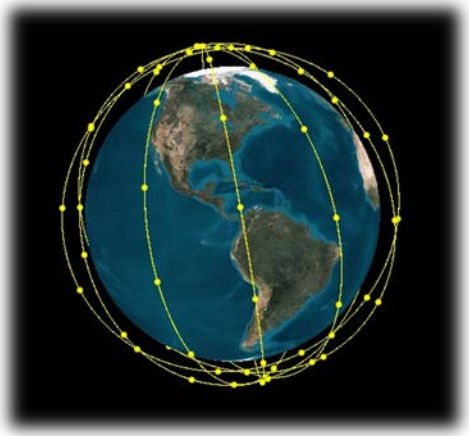
Artist rendering

- Each satellite is a node in an IP network
- Satellite connects either:
  - Directly to a hub or another user, or
  - Indirectly via another satellite

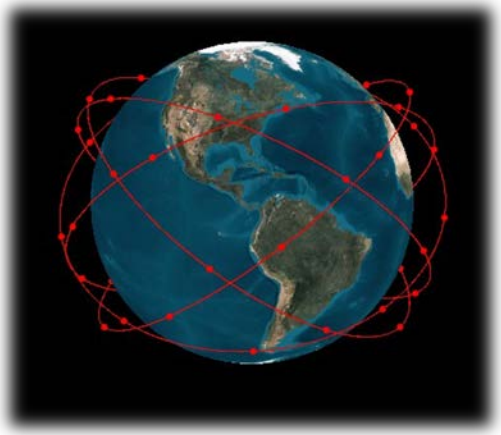


Orbits—Efficient and Targeted Location of Satellites

- Combination of polar and inclined orbits
  - Polar LEO – <u>global coverage</u>
    - Minimum of: 72 satellites, 12 satellites in each of 6 planes
    - Planes are inclined 99.5 degrees
    - Orbit altitude is 1000 km



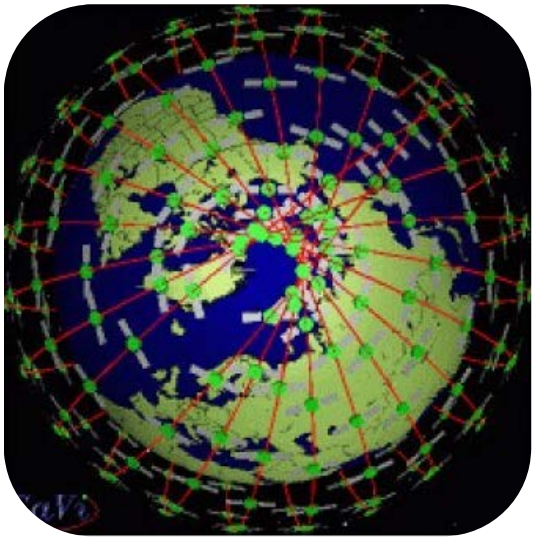
  - Inclined LEO – <u>focused capacity on regions of highest demand</u>
    - Minimum of: 45 satellites, 9 satellites in each of 5 planes
    - Planes are inclined 37.4 degrees
    - Orbit altitude is 1248 km



- Efficient capacity expansion by adding satellites to each plane of the inclined and/or polar orbits, and/or adding additional planes to either or both of the orbits (subject to regulatory approval)

Key Components

- Active array antennas
  - Satellite user and gateway beams to be formed using active array antennas with state-of-the-art digital beam forming capability
- On-board processors perform signal regeneration (i.e., demodulation and re-modulation) and routing of IP traffic
  - Each satellite becomes an IP router
  - Link performance is improved and capacity is increased when compared with a simpler channelizer or bent pipe payload
- Satellites interconnect via inter-satellite links (ISL)
  - Each satellite has multiple beams that can connect to other satellites



ISLs

True Global Coverage

- Ability to connect from any point to any point and serve customers anywhere on the earth
  - Including underserved locations – maritime, aero, rural and remote, poles – where the satellite cannot see a hub
- Number and size of the spot beams, as well as the amount of spectrum and power per beam, can be varied dynamically, providing highly efficient utilization of spectrum and orbital resources

Key Benefits of Telesat's LEO System

- **High speed, cost-effective capacity**– Telesat's NGSO constellation will have multiple terabits of high speed (Gbps), cost-effective capacity
- **Low latency** – comparable to terrestrial networks
- **Flexible, Global Connectivity** – Continuous coverage around the earth and ability to dynamically focus and refocus capacity to address evolving requirements
- **Resiliency and Security** – NGSO constellations with inter-satellite links and on-board-processing provide a level of resiliency and security not possible with GSO, terrestrial networks or NGSO constellations without these features

Key Accomplishments to Date

- Rights to NGSO Ka-band spectrum – approximately 4 GHz
- Developed an innovative (patent pending) constellation design and system architecture
- Procured two prototype LEO satellites for launch in 2017
    - Provides capability to perform testing and trials
- Telesat is targeting start of commercial service for its NGSO constellation in 2021 and is now engaging with prospective industrial partners, suppliers and users