Agenda Item ?: Safety and Air Navigation

PROJECT LOON – FLOATING CELL PHONE TOWERS IN THE SKY

(Presented by CANSO)

SUMMARY

This paper presents an update on Project Loon, a heavy free unmanned balloon network which intends to bring the internet to underserved parts of the world. It will outline recent achievements and plans forward. It will also outline the General Assembly's endorsement of this project which supports the United Nations Sustainable Development Goals and ICAO's No Country Left Behind initiative.

1.   INTRODUCTION

1.1.   Google directs their internal Research and Development funds toward solving worldwide challenges. Supporting the United Nations Sustainable Development Goals (9 and 17), Project Loon seeks to enable education, investment, remote medical information and emergency services by expanding the internet capability to areas of the world which are currently underserved. Google X recently joined the Civil Air Navigation Service Organization (CANSO) as a way to work in partnership with ANSP's worldwide and support ICAOs No Country Left Behind initiative.

2.   DISCUSSION

Progress to Date

2.1.   Loon began in 2013, and initially focused its resources on the science of the balloon itself (design, fabric, architecture) and the ability to use the winds to navigate to the areas of the world which need the internet services to improve the lives of citizens. As the project continues its research and development of the communications payload, it is moving into full demonstration/validation of the balloon's ability to operate in a geographic region of interest.

2.2.   During the research and development phase, Loon significantly improved the balloon design, manufacture and launch procedure. The balloons are now robust, remaining aloft well beyond the targeted 100 days, and are launched through a custom developed auto-launcher, allowing rapid multiple launches. Loon fully complies with ICAO standards for heavy balloons, and has gone well beyond the safety requirements by adding several layers of safety equipment (including ADS-B) onboard the payload.

2.3. During the demonstration/validation phase, Loon combined publicly available sources of wind data with their own extensive flight data (over 1000 balloons, 850,000 flight hours and 25 million flight kilometers), using its massive computer power to create models and simulations that enable much more efficient balloon navigation.

2.4. With a combination of this data and the smart technology used in the balloon itself, Loon balloons are able to change altitude to "catch" the winds moving at the speed and direction necessary to a given service area.

Next Steps and Reassurance

2.5. Loon is finalizing its Safety Management Plan (SMP) and formalizing its operations center known as Loon Mission Control (LMC), using best practices from around the world, in order to take the next operational steps.

2.6. Loon is planning a further series of Regional Demonstrations, focusing on underserved areas, partnering with local telecommunications authorities. Loon is actively seeking working relationships, as outlined in the ICAO State Letter, with key Civil Aviation Authorities and Air Navigation Service providers for overflight Letters of Agreement (LOAs), as well as possible launch and landing sites.

2.7. It is important to note that Project Loon balloons do not carry ANY military devices, no cameras and no surveillance (apart from ADS-B) capability. Project Loon intends to partner with local telecommunications companies, not compete with them. Project Loon is fully committed to being a good aviation citizen.

2.8. Loon remains grateful to the many States which have been supporting Project Loon, since inception. And particularly thankful to both Kenya and Nigeria who recently signed agreements for overflight during the ICAO Assembly. In order to continue to progress to operational internet service to underserved areas, overflight discussions and agreements are key.

ICAO General Assembly Record Regarding Project Loon

2.9 CANSO presented a Working Paper on behalf of Project Loon both to the Executive Committee and Technical Commission, which resulted in the following notation in the formal record:

"The Committees considered A39-WP/194, presented by CANSO and supported by Burkina Faso, Saudi Arabia, South Africa and Venezuela, that provides an update of Project Loon, calls on States and ANSPs to review the information contained in the ICAO State Letter on the subject (AN13/22.1-16/42), and, in light of that information, review procedures and establish Letters of Agreements to ensure safe overflight provision. *The Committee noted that this initiative directly supports SDGs 9 and 17 and encouraged the Assembly to endorse the spirit of paper extending its coverage to all aviation solutions that are compliant with SARPs that assist in the achievement of the SDGs related to bringing the internet to underserved parts of the world.*

3.   ACTION BY THE MEETING

1.   The meeting is invited to:

a) note the intent of Project Loon to support the United Nations Sustainable Development Goals and ICAO's No Country Left Behind initiative as well as the ICAO Secretary General's recent State Letter (**Attachment A**), and

b) noting Loon's progress, work with Project Loon by entering into overflight agreements so that Loon can expand its global and regional testing and validation, and

c) noting the benefit that Loon will bring to underserved parts of the world, be an advocate for further understanding with associated Ministries within your State.

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