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U.S. Delegation to the OSCC

Please see the attached presentation for the Second Open Skies Review Conference, 7-9 June 2010

**Working Session 2, Agenda Item (iv):**
**"Digital Data Distribution"**

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**Working Session 2: Agenda Item (iv):**
**"Digital Data Distribution"**

Food for Thought: Reviewing Methods for Digital Data Distribution

**Issue:** As the Open Skies Treaty moves into the digital world, we must address how we are going to share the imagery and digital information collected during missions. This includes sharing with the observed party, as well as any other State Party that requests the data. The method chosen needs to ensure the viability of the Treaty well into the future and be in keeping with the open and transparent spirit of the Treaty, while easing implementation. There are many ways to do this, varying from online data storage and transmission, to transferring digital media through embassy channels. Several OSCC Decisions should be reviewed or eliminated, including:

Decision 5: Responsibility for the processing of film used during an observation flight

Decision 8: Intervals at which data shall be annotated with information

Decision 9/02: Protection of data collected during observation flights and transfer of recording media containing this data

Decision 10/02 (Rev 1 to D18): Mandatory time period for storing and sharing data recorded during observation flights

Decision 12/05: Standardization of Logical Formats for exchange of digital data among participating states, a.k.a. the OSDDEF Decision

Decision 2/09 (Rev 5 to D1): Distribution of costs arising under the Treaty on Open Skies. (film processing costs)

OSCC.XXVIII.JOUR/81, 22 July 2002, Annex 6: Statement by the delegation of Germany to the Open Skies Consultative Commission on the Bilateral Agreement on calculating the costs arising from data-sharing in accordance with the Treaty on Open Skies.

**Goal:** Have OSCC agreed procedures and a digital distribution system in place in advance of the first observation flight conducted with certified digital sensors. Timeframe: one year – 18 months.

**How:** There are several ways to share digital data, from something akin to the methods in use now, to more modern methods such as an online portal. This paper describes the range of possible methods.

Minimal changes: Though certainly not advancing the efficiency of the process, digital data could be distributed by burning disks of the requested imagery and shipping them similar to how it is done currently.

Some changes: Slightly modernizing the process, one could create a central database in Vienna, managed by the OSCE. Data would be retrieved by physically downloading on site in Vienna. From there, the data could be either transmitted from another computer, or physically transported back to capital.

Complete process change: The most efficient method of data dissemination would be retrieval through an online database. This of course carries the additional cost of creating and maintaining the computer hardware on which the database is kept. However, this cost would likely be offset in the long-term by cost savings in film development or printing of imagery, as well as transportation or shipping costs. The database could be centralized in Vienna as in the previous paragraph, or each state could maintain its own data which was then accessed through a central portal web page run by the OSCE.

Other considerations: Significant risks are associated with a completely online system, especially security and availability of the data. But, technology exists to significantly mitigate these security risks, and the data is unclassified. Also, maintaining a distributed database instead of the centralized database places costs on those who fly the flights and use the system rather than on everybody, and reduces risk of losing all the data simultaneously. However, in that case, more

nodes are open to intrusion, and not every country has the same IT capability (availability, speed, security, etc). If the decision is to move to a completely online system, it is likely that the data request system would move online too. The Decisions relating to those requests would all have to be reviewed and possibly changed.

One further consideration is willingness of all states parties to accede to a process where sharing of data is seamless or nearly so. Some states parties collect much more than others, and would be less interested in sharing since they have the data they want already. Perhaps having ready access to the data of all flights done over their own territory (for mapping, resource management, etc.) would be an incentive.

**Recommendation:** Review current OSCC Decisions regarding film exchange, update and propose new provisions as necessary. If States Parties are interested in exploring concepts other than the current film exchange model, alternate approaches will be presented to the OSCC for review in the near future. Any new agreed approach should be designed and implemented within 18 months.

OPEN SKIES REVCON 2010

# DIGITAL DATA DISTRIBUTION


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## Overview

- Background
- Options
  - Minimal Changes
  - Some Changes
  - Total Process Change
  - Variations/Combinations
- Constraints
- Conclusions

# Background

- Film is becoming obsolete
- Digital products are coming
  - Easier to store, share and analyze
  - Cheaper
- Sharing is required by the Treaty

# Options

- Minimal changes
  - Digital version of current system
- Some changes
  - Centralized, but not accessible online
- Complete process change
  - Centralized, accessible online
- Variations/Combinations?

# Minimal Changes

- Each country keeps their own data
- On request through F17:
  - Data is burned to disc (cd or dvd)
  - Shipped via current methods (postal system)
- Enormous amount of data = lots of discs
- Not gaining much efficiency




# Some Changes

- Data maintained in central database in Vienna
- On request though F17:
  - Data burned to disc, shipped from Vienna via postal system
  - or
  - Data retrieved (downloaded) in person with a portable (external) hard-disc drive

## Complete Process Change

- Data maintained in central database in Vienna
- Database connected to internet via OSCE-maintained web portal
- Data requested is downloaded directly
- Enormous amount of data requires T3 lines (very high capacity)
- Centralized/online database requires extensive security procedures (expensive)

## Variations/Combinations

- Some countries connected via internet, some not, based on ability to pay costs of transmission infrastructure
- Ship via solid-state drive or hard-disc drive instead of discs (cd or dvd)
- Phased approach

# Constraints

- Security of an online system
  - Hackers, viruses, spyware, etc
- Amount of data (Terabytes per mission)
  - 1,000 - Kilo
  - $1{,}000^2$ - Mega (1Meg = 1 small digital photo)
  - $1{,}000^3$ - Giga
  - $1{,}000^4$ - Tera

# Constraints

- Costs:
  - Discs and shipping
  - Central database
  - Transmission infrastructure (T3 lines)
  - Security processes/personnel

# Conclusions

- Open Skies WILL go digital
- Sharing WILL occur
- How?

# Questions?