Appendix 1

State and ANSP Profile - Lutan

Geography, Economics and Politics

- Surface area of approximately 250,000 square km.
- A southern coastline, with little risk of flooding except in extreme weather conditions.
- A seismically active mountain range (Galenean Heights) in the north west of the country with irregular tremors/earthquakes capable of causing significant damage to both physical infrastructure and daily activities especially in the north western region of the country .
- An active volcano on Snake Island is situated 30nm off shore in the Galenean Sea.
- The economy is a mixture of tourism and industrial manufacturing.
- Lutan has been the victim of terrorist activities and threats from a Galenean separatist group on several occasions but is otherwise politically stable
- The country has two major cities:
    - Borax - the capital and
    - Galena - the second city which sits in the foothills of the Galenean Heights on the north side of the mountains - See Appendix 3.

Airspace

- Two FIRs:
    - Borax (XLBB) and
    - Galena (XLGG).
- Lutansian airspace is ICAO compliant and conforms to international standards.
- The northern portion of the Borax UIR is delegated to the Galena sub-ACC (see below) for provision of services to high level transit traffic above FL 290.
- A study is in progress to examine the feasibility of creating a FAB with Aksia.
- Lutan airspace is within the CFMU area of responsibility.

Aircraft Traffic

- Borax and Galena are each served by an international airport with Borax International airport (BIA) attracting 70% of traffic and the remainder using Galena.
- High level overflights of the Borax UIR are a lucrative source of income for the national ANS provider, Lutansia Air Navigation Services Agency (LANSA).
- Total flight volume is considered to be medium, e.g. between 500,000 and 1,000,000 movements per annum.

Aircraft Operators

- The main customer is the Lutan state airline - Air Lutansia - Borax is its hub airport.
- Other national carriers also operate from Borax.
- Several low-cost and freight airlines also fly out of Galena.
- The regional airline association and IATA have privately all expressed concern that Lutansia Air Navigation Services Agency (LANSA) does not appear to have robust contingency arrangements in place.
- All airlines are wholly reliant on continuous ATC operations and informally they have indicated that they expect seamless transition with the minimum of delay (within 48hrs) for the introduction of any long-term Service Continuity plans.

CAA- Regulator/NSA

- The Lutan State Aviation Regulation Authority (LSARA) is part of the national CAA.
- LSARA has also been designated as the National Supervisory Authority (NSA).
- The NSA has stated that "by principle" the **safety and security levels should not be compromised under emergency, degraded modes of operations, service continuity** or any other abnormal situations. The remaining criteria to be considered for contingency are (not exhaustive):
    - Capacity: can be adjustable according to the contingency phase.
    - Environment: controls/constraints may be relaxed to permit contingency ops.
    - Efficiency: the ability to re-coup losses as quickly as possible to maintain commercial viability.
    - Reaction time: time required to implement measures.
- The NSA is in regular contact and enjoys cordial relations with neighbouring countries especially Aksia.

ANSP

General

- Lutansia Air Navigation Services Agency (LANSA).
    - A private company completely separated from LSARA) from whom it receives little if any financial aid and support;
- Relationship between LANSA and LSARA is cordial.
- LANSA also enjoys good relations with Aksia Air Navigation Services Authority (AANSA) and Valsepa Air Navigation Enterprises and Safe Skies Agency (VANESSA). Negotiations with both are ongoing regarding the creation of a FAB.

Air Navigation Services (ATC)

- Borax ATCC is situated at the Borax International Airport (BIA) and provides en-route/area services and Borax approach services within the Borax FIR. It also has a FMP WP (CFMU).
- LANSA also provides TWR service for BIA.
- Galena ACC is situated at the Galena Airport (also international) and provides:
  - Area service within the Galena FIR and northern part of the Borax FIR (above FL 285).
- LANSA also provides APP/ TWR services for Galena Airport.

Other Services

- ATFM and AIS services (including international NOTAM office) for both FIRs are provided through the Borax ATCC.
- MIL ATC provides services for military traffic; military facilities are not suitable for civil use. .

CNS

- All external CNS services (e.g. surveillance, radio communications) are provided by a subsidiary of LANSA.
- Comprehensive radar, communication (R/T and ground/ground) networks and NAV (VOR/ DME, RNAV, etc.) infrastructure provide multiple layers of coverage and redundant capability covering both FIRs.
- 'In house' engineering is used for the day-to-day management of the equipment used in the Borax ACC, Galena ACC sub-centre and Approach/Tower facilities.

Contingency Arrangements

- Only very embryonic ANS Contingency Plans are in place,
- LANSA achieved Certification in accordance with EC Reg 2096/2005 in late 2008.
  - On the understanding that it would significantly develop and improve its contingency plans which should be submitted to the LSARA NSA by the end of 2009.
- LANSA CEO, Mr I A M Readi, has publically stated that LANSA will be prepared for every eventuality by 1 Jan 2010. The company is therefore highly motivated to ensure continuous provision of ANS encompassing all aspects of Contingency.
- In the context of the FAB negotiations with Aksia and Valsepa, it is foreseen that future contingency solutions should be mutually beneficial where possible.

ANSP Facilities

- All ATC facilities in the country are supplied by the same manufacturer and are configured with the same type of work stations/consoles.
  - They also share a common software platform for all applications.
- Borax ACC has 4 spare work stations which it uses for technical developments, simulations and training. It is estimated that depending on any re-configuration for operational use, they could provide:
  - Up to 50% of the Borax ACC's demand/capacity or
  - Up to 75% of the Galena sub centre's demand/capacity.

Note: The spare work stations are not suitable for 'hot swap' scenarios to help 'clear the skies'.

- Galena sub-centre ACC also has a small-scale redundant capability of 2 work stations. It is anticipated that, depending on configuration, they could provide:
  - 50% of Galena's sub centre routine capacity when configured for contingency or
  - A limited Approach service (up to 50%) for Galena airport or
  - 25% of Borax's routine capacity.

    Note: These Galena estimations are largely theoretical since they have not been tested or exercised.
- Approach/Tower set up at Galena is not able to provide any en route services.
- The 'Ramp' facilities at Borax and Galena airports could be considered for upgrading to ATC standards.

Air Traffic Disruptions - Simulation Data (**for demonstration/representative purposes only**)

- Simulations undertaken at EUROCONTROL indicate that in the event of disruption of **LANSA ANS at Borax**, the overall state impact, **per day**, in terms of cancelled flights, minutes of re-routing and delays relating to 0%, 25%, 50% and 75% demand/capacity restoration (however achieved) would be as follows:

Restored Demand/Capacity	**0%**	**25%**	**50%**	**75%**
Flights Cancelled	1081	958	509	191
Re-routeing (mins)	2469	980	959	525
Delays (mins)	-17,061	-18,691	-10,247	-2044

- Discussions between experts (expert judgement) also provided an indication of the typical difference in the number of days spent in the 'recovery' mode

that LANSA could foresee **with** or **without** a **service continuity recovery strategies in place**.

Number of Days of Spent in Recovery Step				
Restored Demand/Capacity	**0%**	**25%**	**50%**	**75%**
Wait and See (no Service Continuity)	30	100	200	770
Training/Simulator (Borax)		1	5	1094
Co-located in Galena	5	10	1085	

National Infrastructure

- Lutan is self-sufficient in oil and natural gas.
- However, the national electricity supply is occasionally disrupted for periods up to 24 hrs.