



PBN Helicopter applications implementation in Switzerland

EASA OPS WS 7th October 2015

Laurent Delétraz, skyguide

PBN is a key enabler for HEMS operations

- › RNP 0.3 all phases of flight
 - En-route
 - Point-in space approach
 - Point-in-Space departure
 - RNP 0.3 Initial, intermediate, final and missed approach

- › RNP AR
 - May be required for challenging environment
 - PROuD SESAR Demonstration project

The vision for HEMS operations by rega

- › Provide helicopter emergency medical services in all weather conditions anywhere – Anytime.
 - in icing conditions
 - Serve remote mountainous locations
 - IFR outside controlled airspace
 - IFR without ATC
 - see the Rega vision on youtube
<https://www.youtube.com/watch?v=yEic9tkcVw4>

RNP 0.3 Low Flight Network WEF JUN 2015

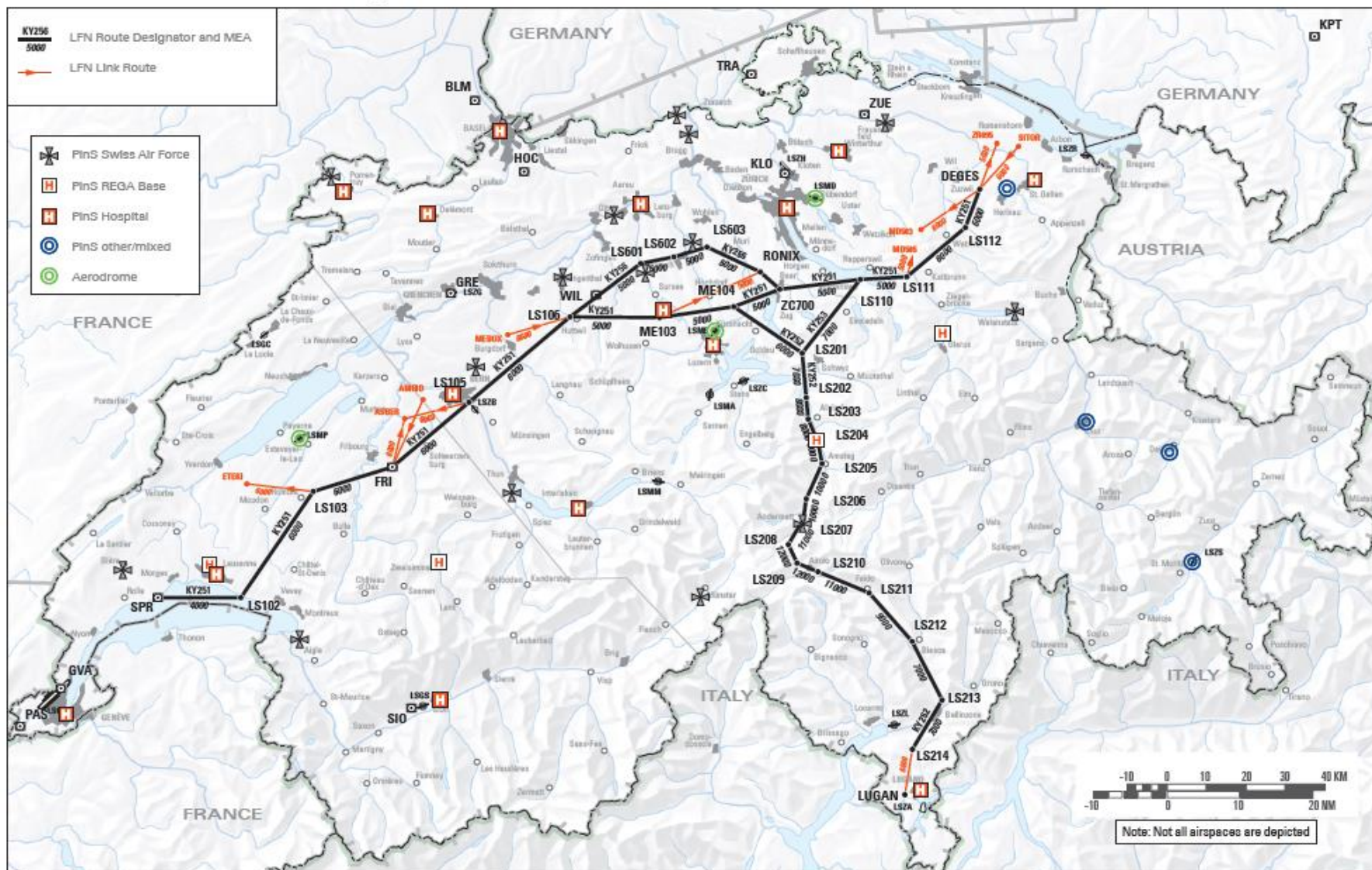
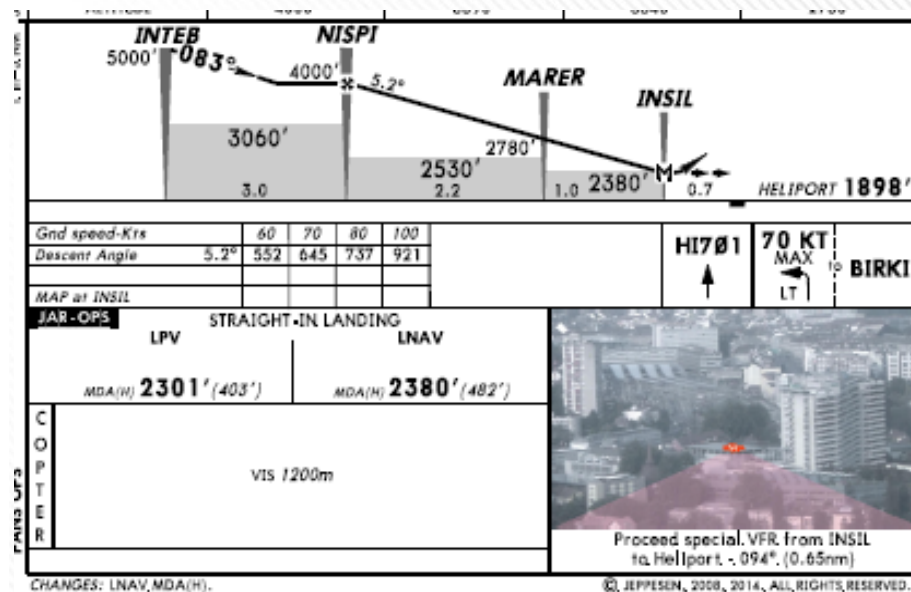
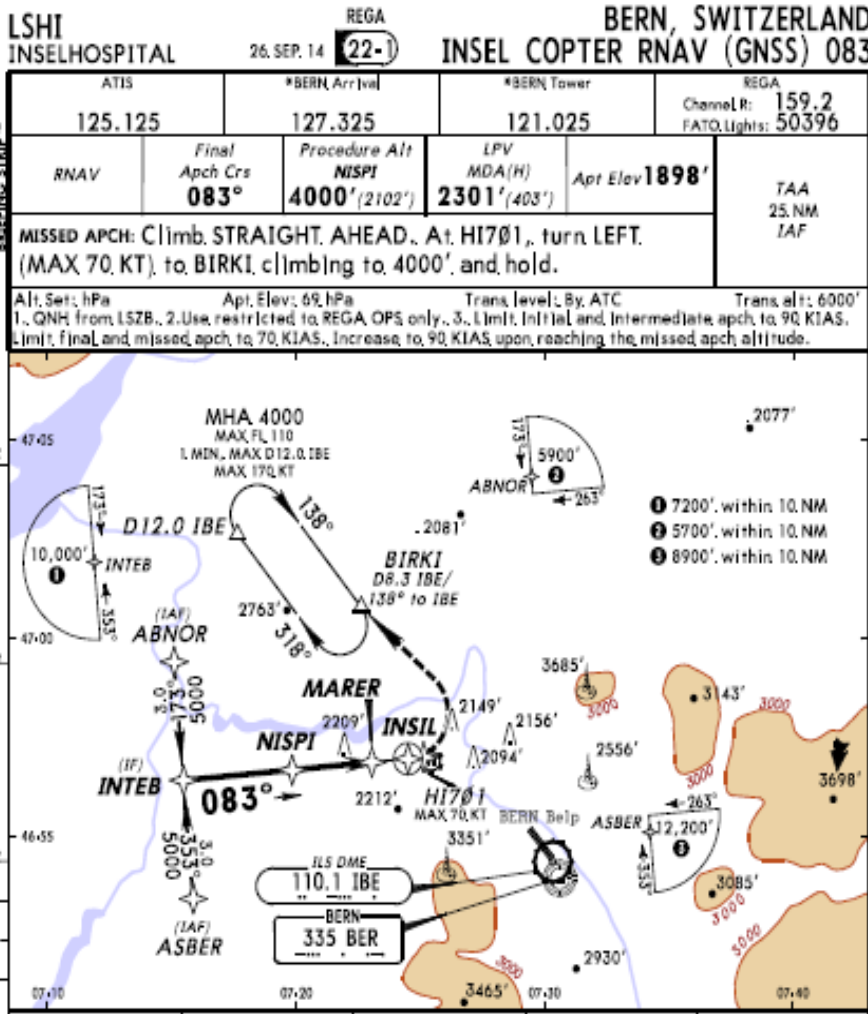


Chart provided by AIM Charting/OADK

2015-02-13

LPV PinS Approach & Departure Supports today the Insel Hospital Bern

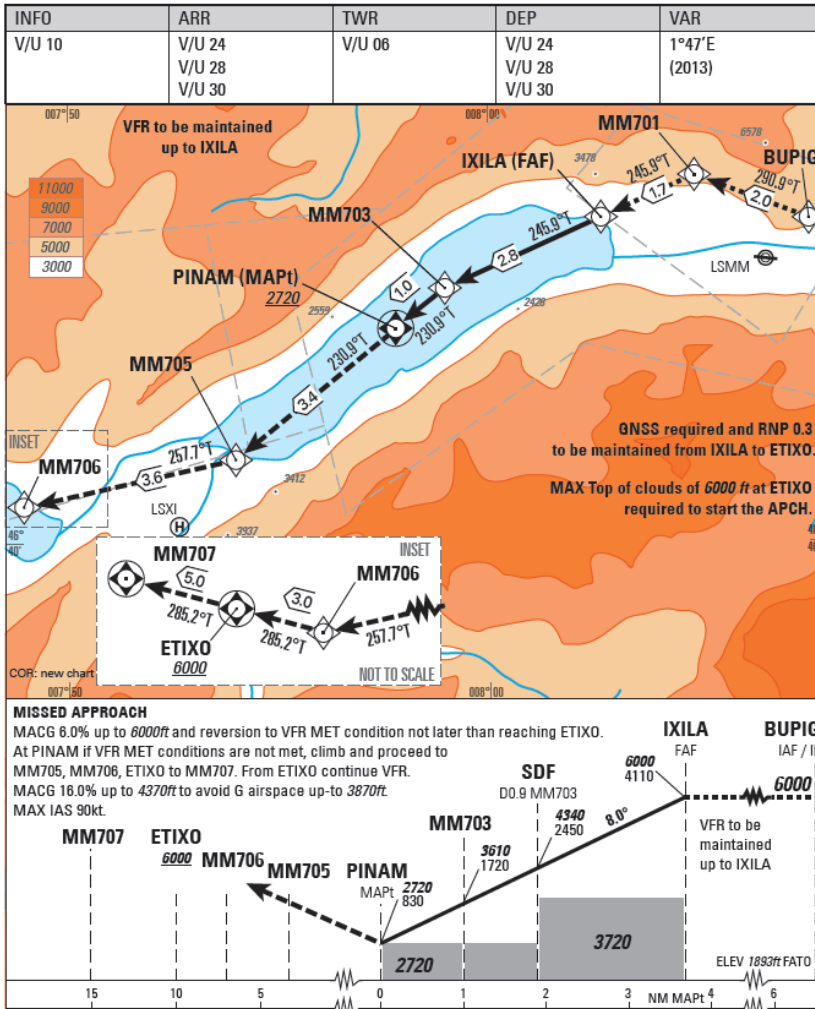


RNP 0.3 missed approach PinS

Cloud break procedure WEF OCT 2015

INSTRUMENT APCH CHART

LSMM MEIRINGEN COPTER
RNAV (GNSS) 244Z



Helicopter Approach in Fog

- From VFR on top
- To Special VFR below the clouds
- Full IFR final approach and missed approach
- 8° Flight path angle
- Rega SFOCA Ops Approval
- AW109SP (2xSBAS)

PROuD slides provided by:
Simona Turco
PROuD Project Manager, IDS



POWERED BY
SESAR
JOINT UNDERTAKING



Oct 2014

PROuD is here

Apr 2016

Procedures design and validation

Flight Trials

Data analysis and results



PROuD is a SESAR Large Scale Demonstration Project co-financed by SESAR JU.

It aims at enhancing rotorcraft operations, particularly for HEMS flights, through the implementation of PBN procedures for approach, arrival, departure and connection to low-level IFR routes.

Two campaigns for a total of 80 flight tests are ongoing, in Switzerland and Norway, with a view to demonstrating improved safety, availability, accessibility and weather resilience.

Routes and procedures flown in the PROuD live trials are considered as a starting point for future operational implementation.

PROuD LPV PinS procedures are approved by Norwegian CAA for NLA operations

PROuD will complete its activities in July 2016

PROuD Flight Trials - Switzerland

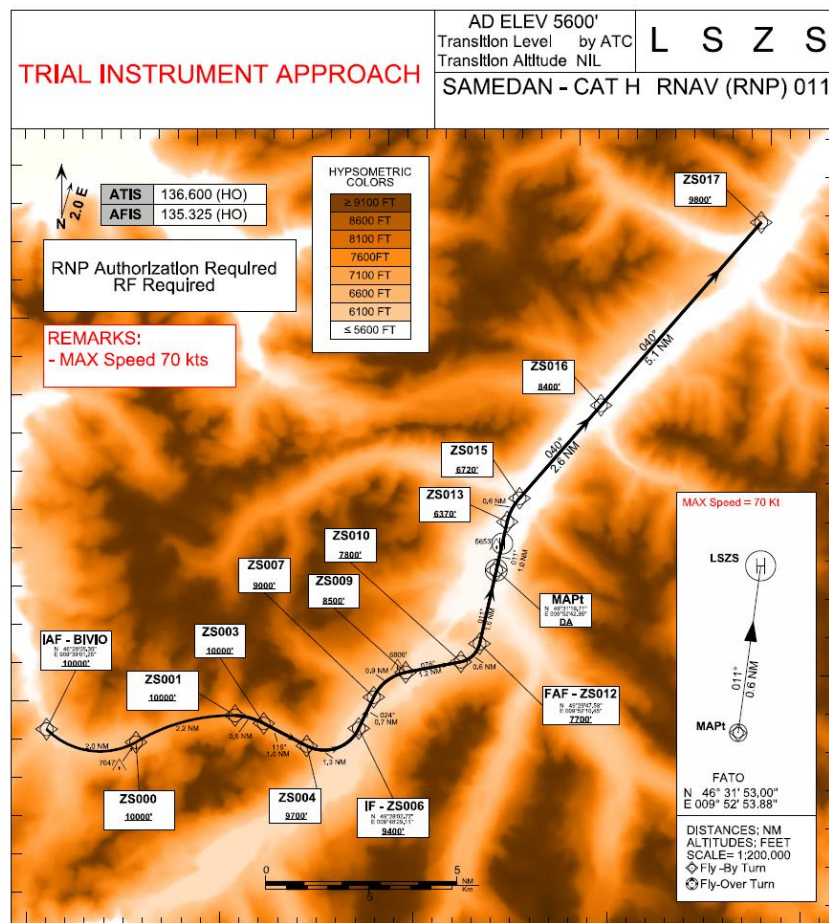
The Swiss trials specifically demonstrated the benefits of the usage of :

- newly designed RNP APCH AR and PinS approach procedures, PinS departures and RNP 0.3 Low Flight Network connecting Samedan and Chur sites
- an innovative ground-based safety net based on ADS-B for improving awareness for ground operators and reduce CFIT probability

Swiss first trial campaign, executed in July 2015, provided important preliminary output supporting future evaluation by the Swiss Federal Office of Civil Aviation (FOCA) for the use of IFR procedures in class-G uncontrolled airspace.



RNP 0.1 Flight trials at Samedan



TSE : < 10m !



In Conclusion

- › Technology exists to support advanced helicopter PBN operations
- › Massive investment is made on the development and implementation of PBN Heli applications
 - Helicopter Flights Inspection / - validation capability
 - AW109SP FFS Simulator
 - Pilot PBN training
 - Safety assessment
 - Helicopter RNP 0.3 in all phases of flight certification
- › Requires close collaboration of all stakeholders
 - Helicopter operators
 - Regulators
 - Aircraft manufacturers
 - ANSP

Let us enable rega's vision

