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APAC ALG TRANSPORTATION INFRASTRUCTURE & LOGISTICS

ČVUT ČESKÉ VYSOKÉ UČENÍ TECHNICKÉ V PRAZE

Report on Similar European Activities

CZCAA IFR Study

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1 Introduction

This report provides an insight into addressing the barriers associated with the implementation of IFR operations at uncontrolled aerodromes and serves as support material for CONOPS and the General Safety Study in this project. The report includes the current situation regarding uncontrolled aerodromes in Europe. The aim is to provide European states' best practice for implementing the procedures in the Czech Republic.

In Europe, IFR operations at uncontrolled aerodromes are introduced in the following countries:

- **Austria;**
- **Denmark;**
- France;
- **Iceland;**
- **Italy;**
- **Hungary;**
- **Germany;**
- **Netherlands;**
- **Norway;**
- **Portugal;**
- United Kingdom.

Countries were contacted by the following key:

- More than one aerodrome must have implemented IFR operations at uncontrolled aerodromes in the country.
- The specific country must work out the IFR operations without important changes to ICAO Annex 14.
- The country does not have precisely described rules for the intended traffic.

France was not contacted due to a different approach to the application of legislation and standards to national rules, and the United Kingdom was not contacted because it has the special regulation CAP 1122 corresponding to a risk-based approach to each implementation case.

Chapter 2 describes the responses already received from the individual states in terms of their national concept of IFR operations at uncontrolled aerodromes.

Above all, Annex 1 analyses national deviations from the runway equipment requirements applicable in the Czech Republic.

1.1 Possible concepts

There are two possible concepts to be analysed. The sole difference is in the runway classification: non-precision or non-instrument (see Figure 1). The first one (Concept 1) will be the classic straight-in approach IFR to the ground and the second one (Concept 2) will be the so-called Cloud Break Procedure, where transition to VFR is needed in MAPt for the possibility to land.

There is a possibility to have even a precision approach to the aerodrome with AFIS only. But as Czech aerodromes do not have the financial resources for building the approach lighting system Cat I, the concept of precision runways is not part of this deliverable.

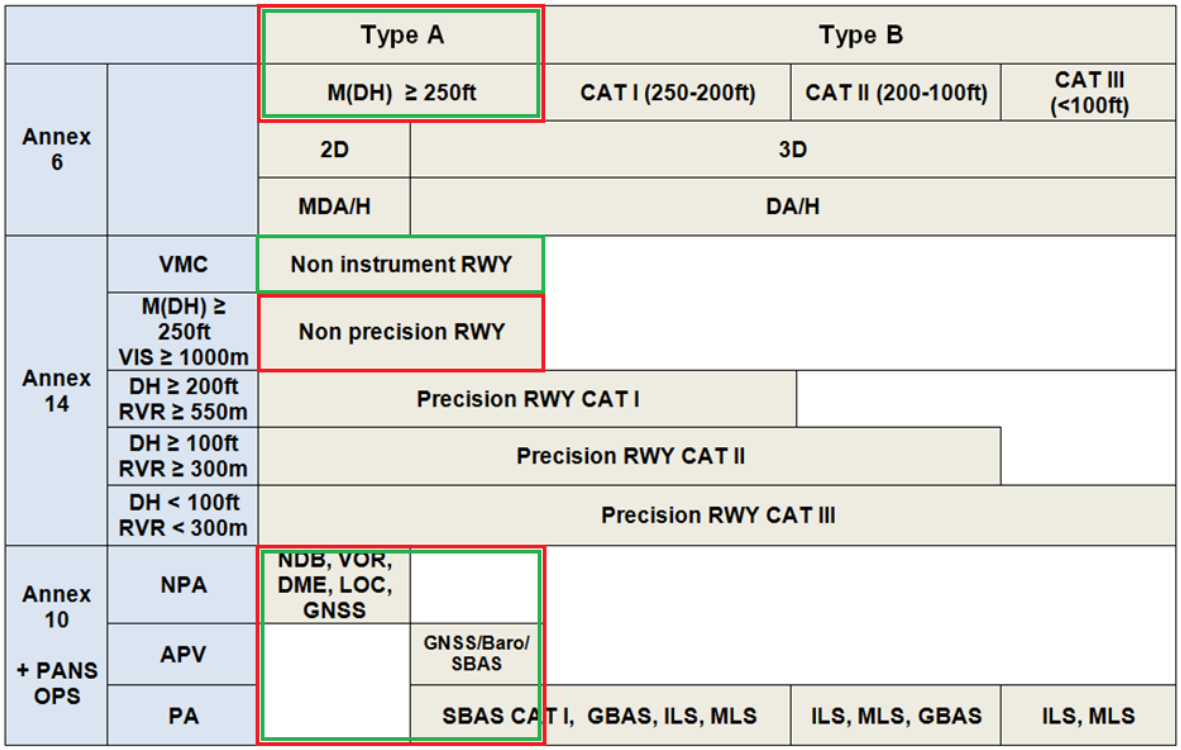

Figure 1: Two concepts (the red one is the classic straight-in approach to non-instrument RWY (Concept 1), the green one is the cloud break procedure (Concept 2))

2 European concept of IFR traffic at uncontrolled aerodromes

2.1 Austria

Austria implemented Concept 2. The basic concept of operation of IFR procedures at uncontrolled aerodromes in Austria includes the following elements:

- AFIS is a sufficient service for aerodromes where Cloud Break Procedure (CBP) is introduced.
- It is possible to implement Instrument approach procedure Type A as CBP.
- Aerodromes are located in Class G airspace.
- In the vicinity of aerodromes, airspace is classified as Radio Mandatory Zones (RMZ).
- Above RMZ, controlled airspace is established.
- AFIS provides service in RMZ.
- IFR to VFR transition in MAPt is needed for landing.

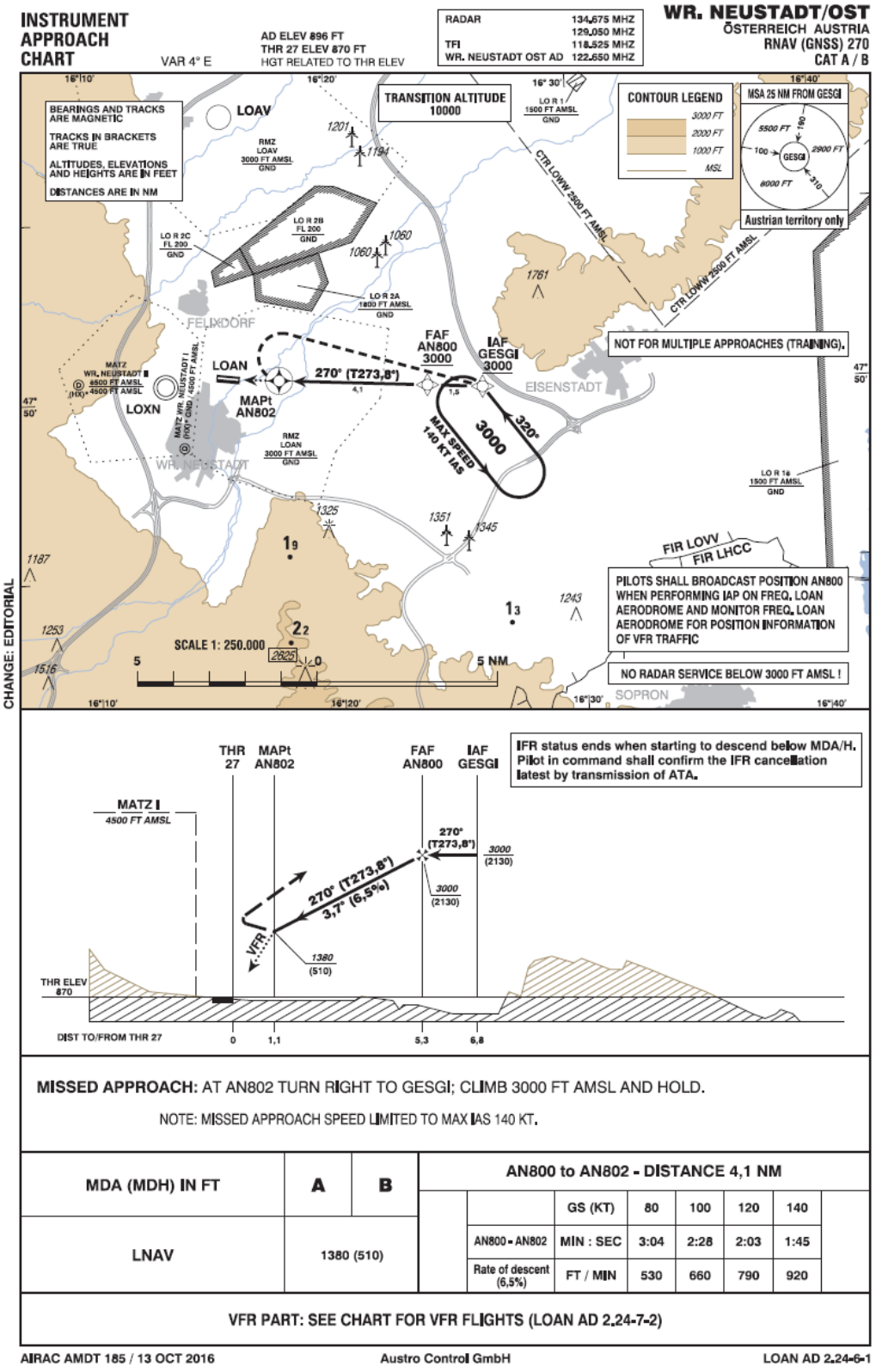

Figure 2: Example of Wr. Neustadt Instrument Approach Chart with AFIS and RMZ (source: Austro Control)

Assessment: The Austrian concept was analysed. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 2) in the Czech Republic appears feasible.

2.2 Denmark

The basic concept of operation of IFR procedures at uncontrolled aerodromes in Denmark includes the following elements:

- The runway should meet the minimum criteria for a non-precision runway as stated in ICAO Annex 14.
- ATC is not required, AFIS is a sufficient service (AFIS must be established at a public airfield when aerodrome is approved for instrument traffic, or aerodrome is used for scheduled air traffic (Danish regulation BL 7-21)).
- It is possible to implement Instrument approach procedure Type A and Type B.
- Aerodromes are located in Class G airspace.
- In the vicinity of aerodromes the so-called Traffic Information Zones (TIZ) are defined, which are classified as Radio Mandatory Zones (RMZ), (TIZ must be implemented if the total number of operations in one year is 15,000 or more; there will be 500 or more IFR operations in a month (Danish regulation BL 7-21)).
- Above TIZ, controlled airspace or Traffic Information Area (TIA) above TIZ, classified as RMZ is established.
- AFIS provides service in TIZ and TIA.

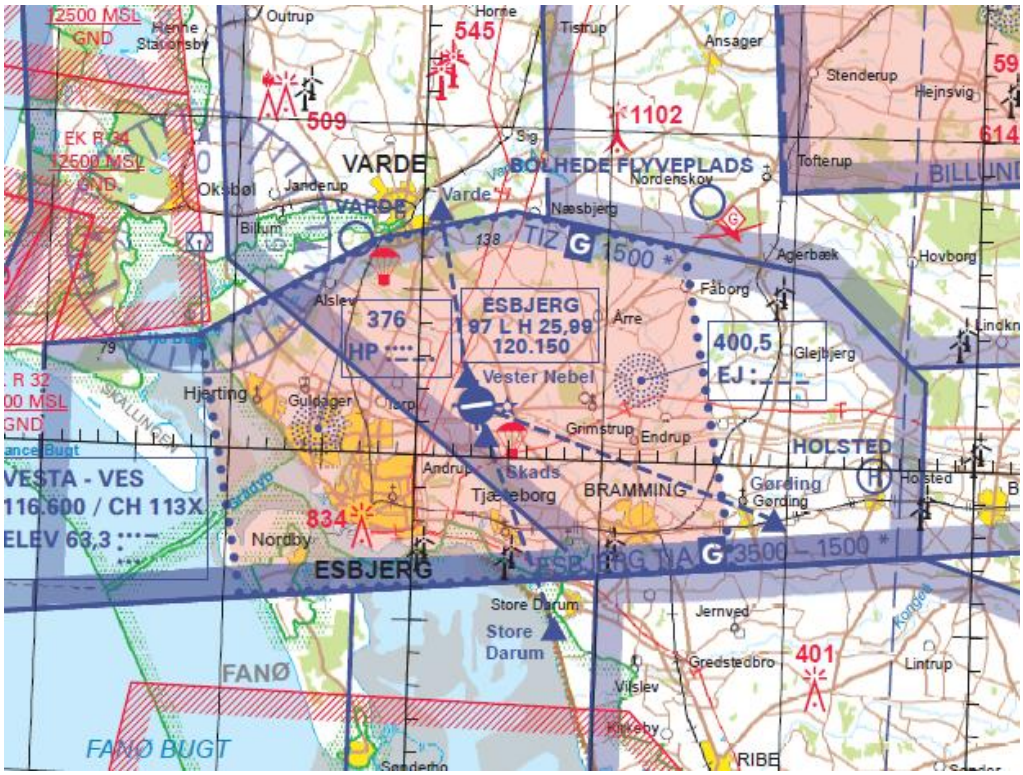

Figure 3: Example of a part of the Denmark airspace with TIZ and TIA (source: EK_Chart_ENR_6_ANC_DENMARK_front_en.pdf)

For now, Denmark does not have any IFR approach to non-instrument runway, but “they do accept IFR procedures to NON-instrument runways” as Ole Pedersen from the Danish CAA stated. The rules for approach minima will be based on a safety assessment and partly on EU OPS (increase in DA/MDA when lighting systems are not available). Probably, 500ft DH/MDH would be used in case of introducing the IFR approach to non-instrument runway. (Ole Pedersen, Danish CAA)

Assessment: The Danish concept was analysed. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 1 and Concept 2) in the Czech Republic appears feasible.

2.3 Hungary

Hungary has four IFR Airports with AFIS and ILS approach: LHDC (switching TWR and AFIS, i.e. controlled/uncontrolled), LHSM (switching TWR and AFIS, i.e. controlled/uncontrolled), LHPP, LHPR and one IFR Airport with AFIS and another type of IFR Approach: LHBC.

The basic concept of operations of IFR procedures at uncontrolled aerodromes in Hungary includes the following elements:

- The runway must meet the minimum criteria as stated in ICAO Annex 14 (IFR day RWY is acceptable).
- ATC is not required, AFIS is a sufficient service.
- It is possible to implement Instrument approach procedure Type A.
- Aerodromes are located in Class F airspace (AMC and GM to EU Reg. 923/2012 (SERA) as limitation for class F is not accepted in Hungary (Tibor Szoke, LHPP)).
- In the vicinity of aerodromes, the so-called Traffic Information Zones (TIZ) are defined, which are classified as Radio Mandatory Zones (RMZ).

“In a normal situation, AFIS has the right to inform, advise or suggest only. But in case of IFR traffic, AFIS has the right to instruct all VFR traffic to stay on the ground or on the border of TIZ to protect IFR traffic. IFR traffic is the priority!” (Tibor Szoke, LHPP)

This can be found in Hungarian regulation “56/2016 (XII.22) NFM rendelet”, where in part 5 is written (translated into English):

“*76. § These types of traffic must hold on TIZ border, or on the ground before take-off due to AFIS request:*

a) VFR traffic on airport where instrument approach available if holding necessary due to safety of arriving IFR traffic

b) …“

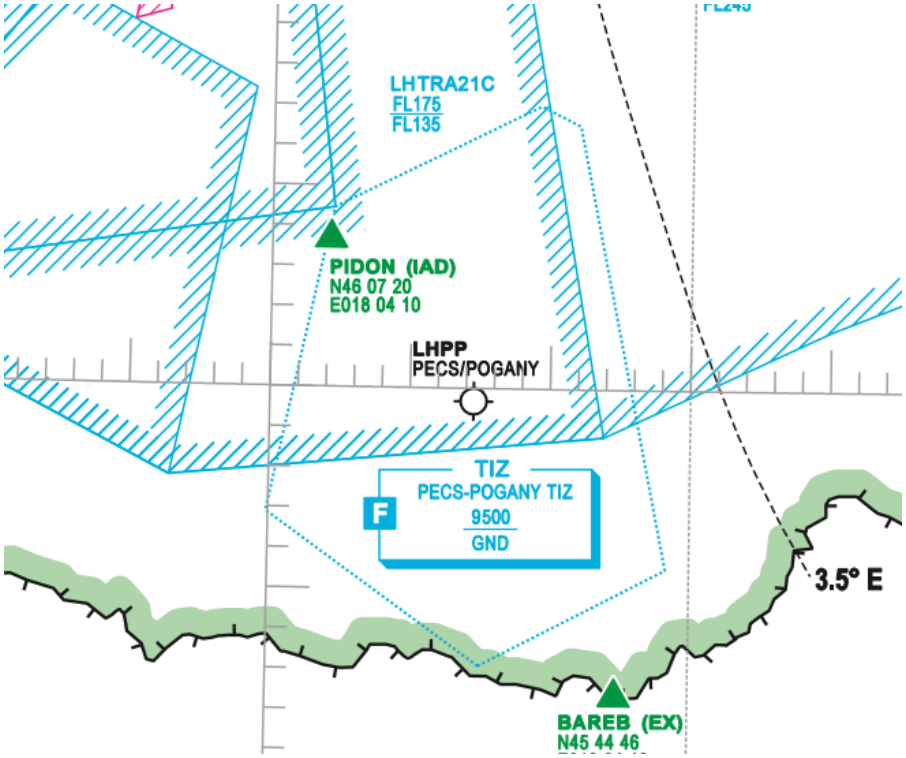

Figure 4: Example of a part of Hungary’s airspace with TIZ class F airspace (source: HungaroControl)

Assessment: The Hungarian concept was analysed. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 1) in the Czech Republic appears feasible. Concept 2 is not implemented in Hungary thus cannot be assessed.

2.4 Germany

Germany has currently implemented IFR operations at 23 uncontrolled aerodromes.

The basic concept of operations of IFR procedures at uncontrolled aerodromes in Germany includes the following elements:

- The runway must meet the minimum criteria for a non-precision runway as stated in ICAO Annex 14.
- ATC is not required, AFIS is a sufficient service (according to "German Aviation Regulation (LuftVO), §24 (1)", IFR operations without air traffic control service are possible for non-commercial flights with aeroplanes with MTOW of less than 14,000 kg).
- It is possible to implement Instrument approach procedure Type A.
- Aerodromes are located in Class G airspace.
- In the vicinity of airports RMZ is defined that extends from GND to 1,000 feet AGL (see Figure 5).

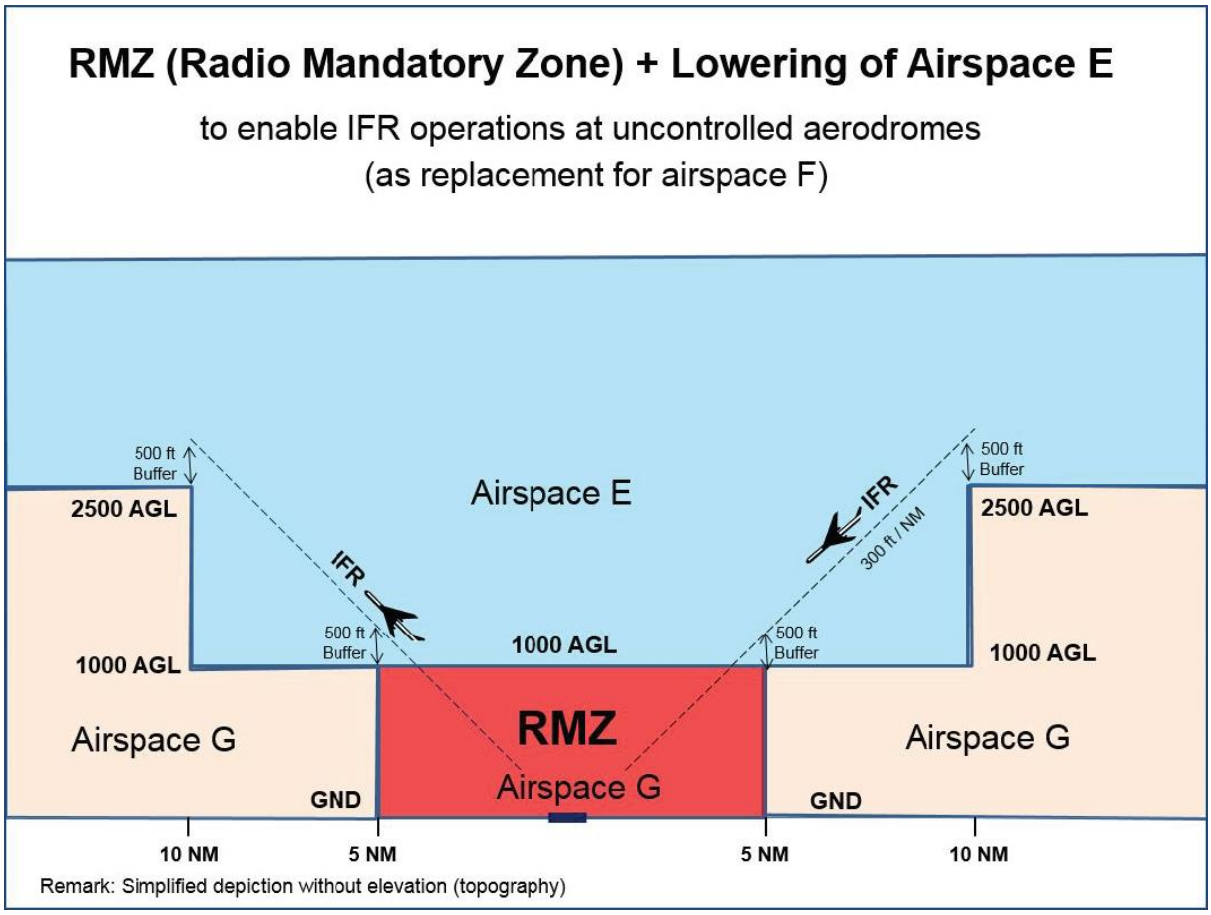

Figure 5: German concept (source: Germany AIC VFR 03 (14))

Figure 6: RMZ with lowered airspace class E example (source: Germany AIC VFR 01 (14))

”DFS received feedback (practical experience) from aerodrome operators and airspace users indicate that this RMZ concept works well.“ (Gunnar Strobel, DFS)

The right of way between IFR and VFR traffic is not regulated.

Assessment: Germany moved to the concept of using RMZ because of the limitations in the use of Class F airspace (GM1 SERA.6001(h) in AMC and GM to EU Reg. 923/2012). The German concept was taken as an example along which the Czech concept should be created. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 1) in the Czech Republic appears feasible. Concept 2 is not implemented in Germany thus cannot be assessed.

2.5 Iceland

Iceland has implemented both concepts (Concept 1 and Concept 2). The basic concept of operation of IFR procedures at uncontrolled airports (Concept 1) in Iceland includes the following elements:

- The runway must meet the minimum criteria for a non-precision runway as stated in ICAO Annex 14.
- ATC is not required, AFIS is sufficient service (used at airports with typically less than 15,000 movements per year).
- It is possible to implement Instrument approach procedure Type A and B.
- Aerodromes are located in Class G airspace.
- Aerodrome Traffic Zone (ATZ) can be established in the vicinity of aerodromes.
- Establishing two-way communication prior to entering the ATZ is mandatory. Outside opening hours pilots are required to transmit their intentions on the ATZ frequency blind.

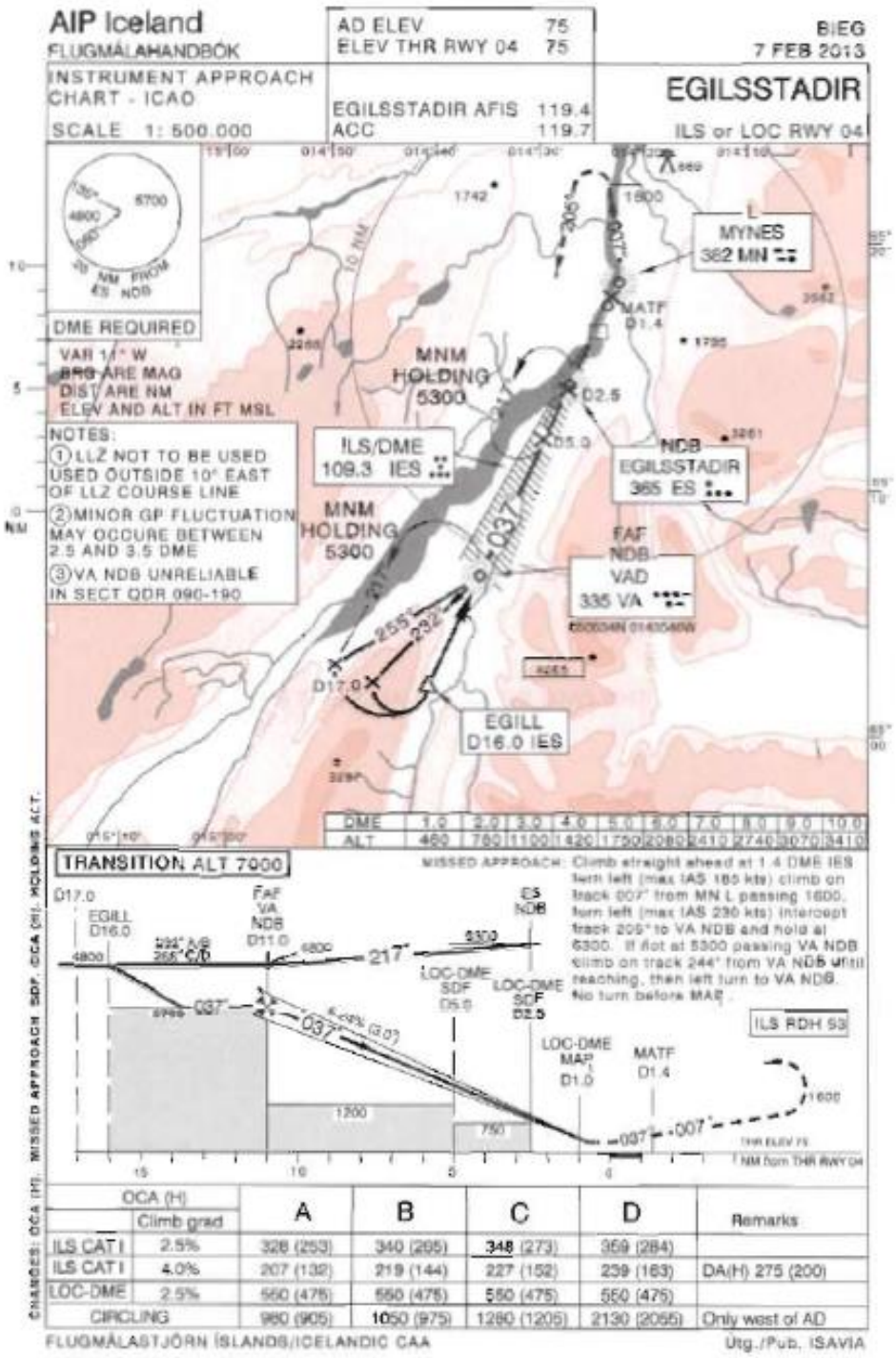

Figure 7: Example of Concept 1 - EGILSSTADIR Instrument Approach Chart with AFIS and ATZ (source: ISAVIA)

The basic concept of operation of IFR procedures at uncontrolled airports (Concept 2) in Iceland includes the following elements:

- AFIS is sufficient service for aerodromes where Cloud Break Procedure (CBP) is introduced.
- It is possible to implement Instrument approach procedure Type A as CBP.
- Aerodromes are located in Class G airspace.
- Aerodrome Traffic Zone (ATZ) can be established in the vicinity of aerodromes.
- Establishing two-way communication prior to entering the ATZ is mandatory. Outside opening hours pilots are required to transmit their intentions on the ATZ frequency blind.

- IFR to VFR transition in MAPt is needed for continuing the approach to landing.

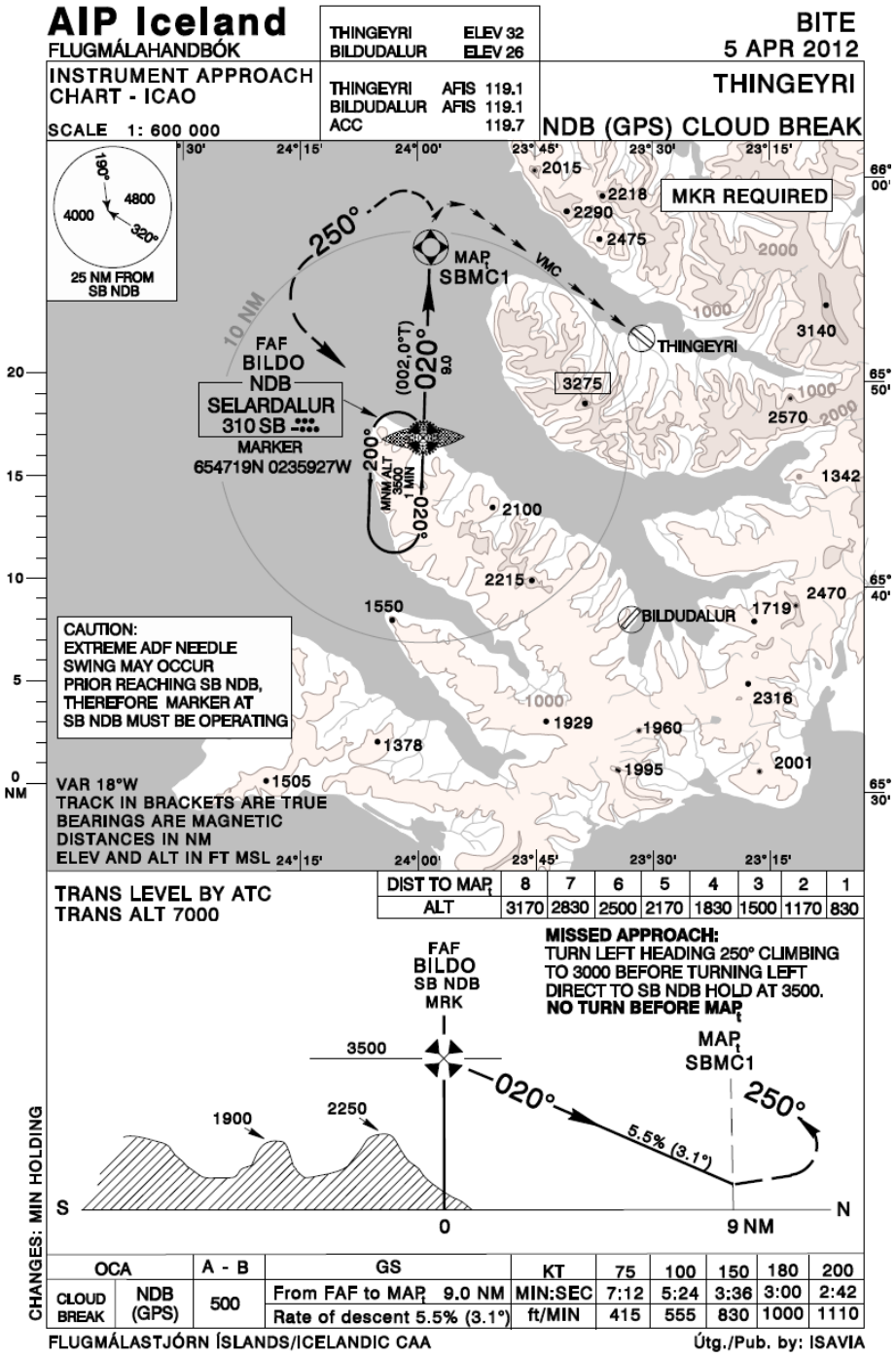

Figure 8: Example of Concept 2 - Thingeyri CBP Instrument Approach Chart (source: ISAVIA)

Assessment: Icelandic concepts were analysed. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 1 and Concept 2) in the Czech Republic appears feasible.

2.6 Italy

The basic concept of operation of IFR procedures at uncontrolled airports in Italy includes the following elements:

- The runway must meet the minimum criteria for a non-precision runway as stated in ICAO Annex 14.
- AFIS is sufficient service.
- Currently, Instrument approach procedures Type A are implemented only (there is no RNP APCH implemented at uncontrolled aerodromes in Italy).
- Aerodromes are located in Class G airspace.
- Aerodrome Traffic Zone (ATZ) is established in the vicinity of aerodromes.

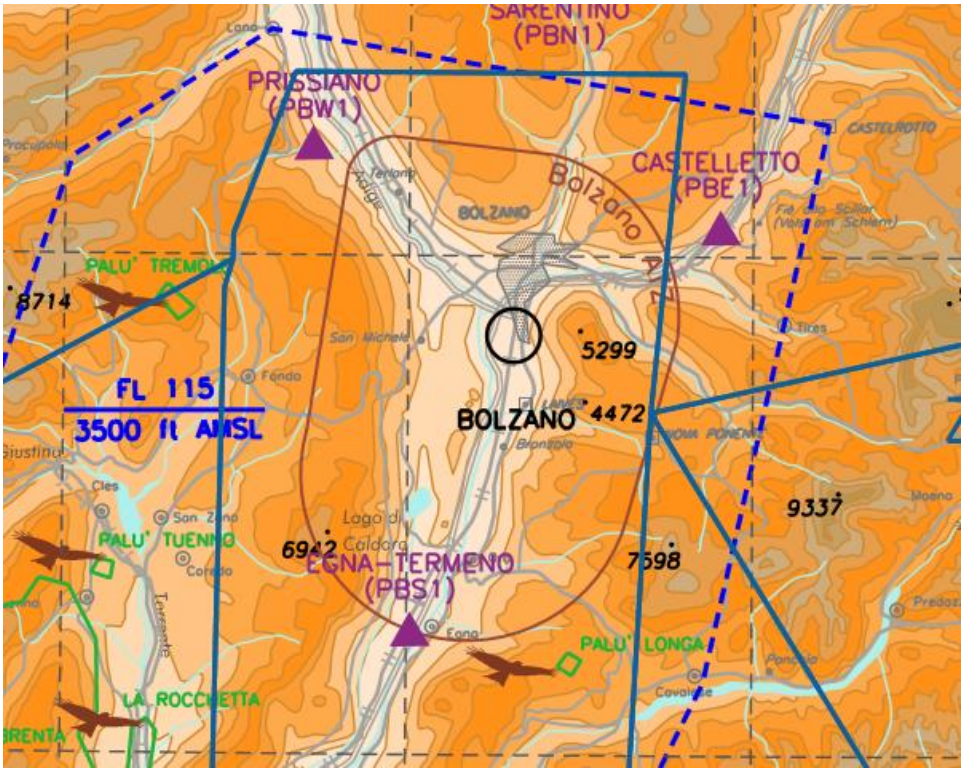

Figure 9: Example of a part of Italian airspace with ATZ (source: ENAV)

Assessment: The Italian concept was analysed. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 1) in the Czech Republic appears feasible. Concept 2 is not implemented in Italy for airplanes thus cannot be assessed. (Concept 2 is implemented at Trento/Mattarello airport for helicopters)

2.7 Netherlands

The basic concept of operation of IFR procedures at uncontrolled airports in Netherlands includes the following elements:

- The runway must meet the minimum criteria for a non-precision runway as stated in ICAO Annex 14.
- AFIS is sufficient service.
- Currently, Instrument approach procedures Type A are implemented.
- Aerodromes are located in Class G airspace.
- Aerodrome Traffic Zone (ATZ) is established in the vicinity of aerodromes.

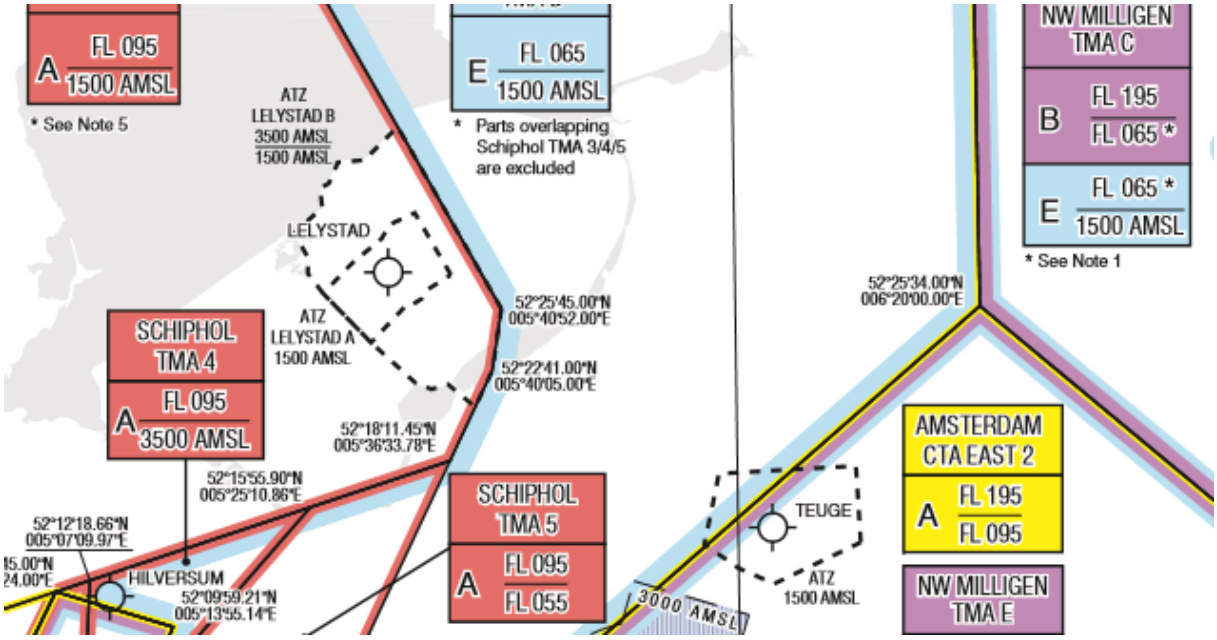

Figure 10: Example of a part of Netherlands airspace with ATZs (source: ENAV)

Assessment: The Netherlands concept was analysed. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 1) in the Czech Republic appears feasible. Concept 2 is not implemented in Netherlands thus it cannot be assessed.

2.8 Norway

The basic concept of operation of IFR procedures at uncontrolled aerodromes in Norway includes the following elements:

- The runway must meet the minimum criteria for a non-precision runway as stated in ICAO Annex 14.
- ATC is not required, AFIS is a sufficient service (used at airports with typically less than 15,000 movements per year).
- It is possible to implement Instrument approach procedure Type A.
- Aerodromes are located in Class G airspace.
- In the vicinity of aerodromes the so-called Traffic Information Zones (TIZ) are defined, which are classified as Radio Mandatory Zones (RMZ).
- Above TIZ, controlled airspace is required (exception can be Traffic Information Area (TIA) above TIZ, classified as RMZ).
- AFIS provides service in TIZ.
- ACC provides service in TIA.

The entire description of AFIS can be found at:
https://ais.avinor.no/no/AIP/View/6/aip/EN_GEN_3_3_en.pdf

”The right of way between IFR and VFR traffic is not regulated and it is entirely up to the AFISO and the involved pilots to sort out any traffic situations or traffic conflicts. AFIS only provides traffic information and it will then be up to the involved pilots how they respond to it. Often the pilots talk to each other and sort it out themselves. For normal IFR/VFR traffic there are no priorities, only compulsory two-way radio communication and good airmanship.“ (Gorgi Borge, Norway CAA)

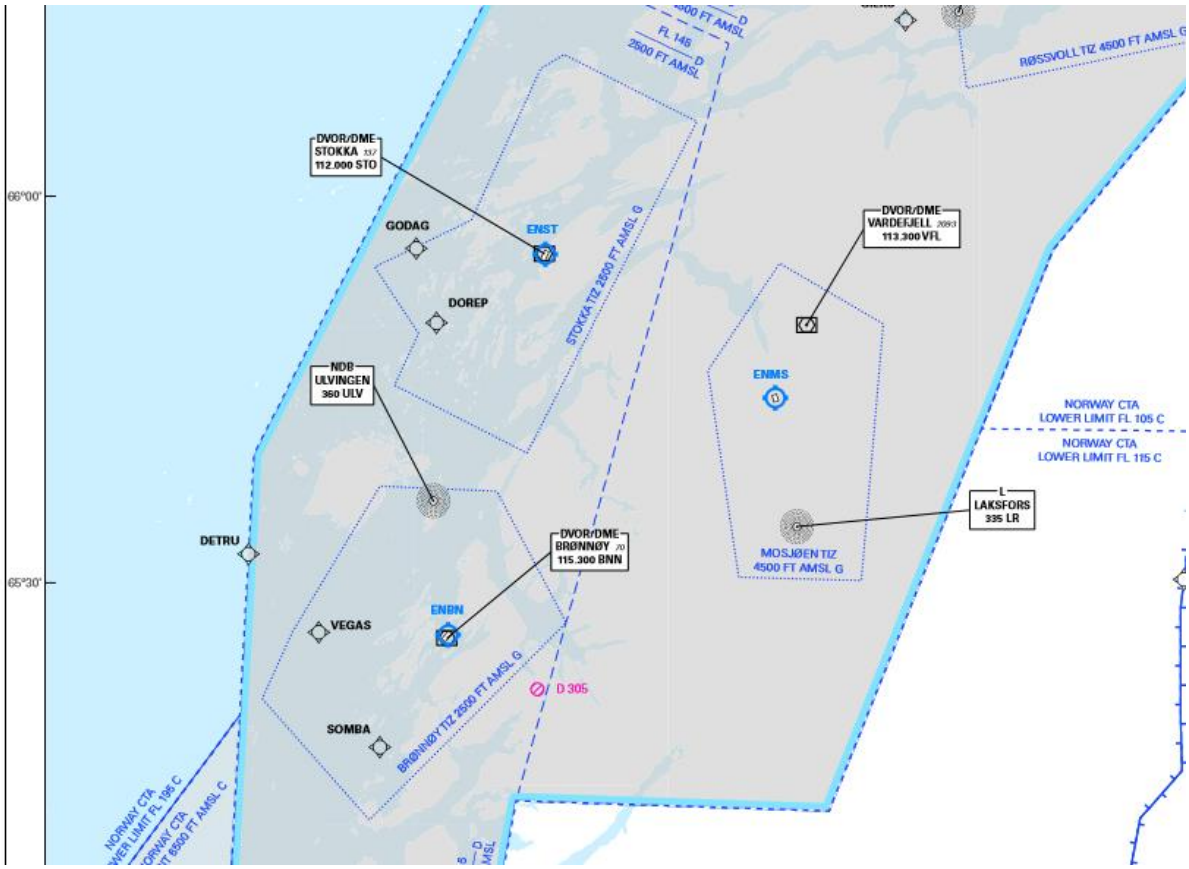

Figure 11: Example of a part of Norway's airspace with TIZs (source: https://ais.avinor.no/no/AIP/View/6/aip/EN_ENR_6_3-13_en.pdf)

Assessment: The Norwegian concept was analysed. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 1) in the Czech Republic appears feasible. Concept 2 is not implemented in Norway thus cannot be assessed.

2.9 Portugal

The basic concept of operation of IFR procedures at uncontrolled airports in Portugal includes the following elements:

- The runway should meet the minimum criteria for a non-precision runway as stated in ICAO Annex 14 (Approach lighting system is not mandatory).
- AFIS is sufficient service.
- Currently, Instrument approach procedures Type A are implemented only.
- Aerodromes are located in Class G airspace.
- Aerodrome Traffic Zone (ATZ) is established in the vicinity of aerodromes.

Among Portuguese airports, there is one exception: Corvo aerodrome. Based on available information, Corvo operations can be classified as Concept 2.

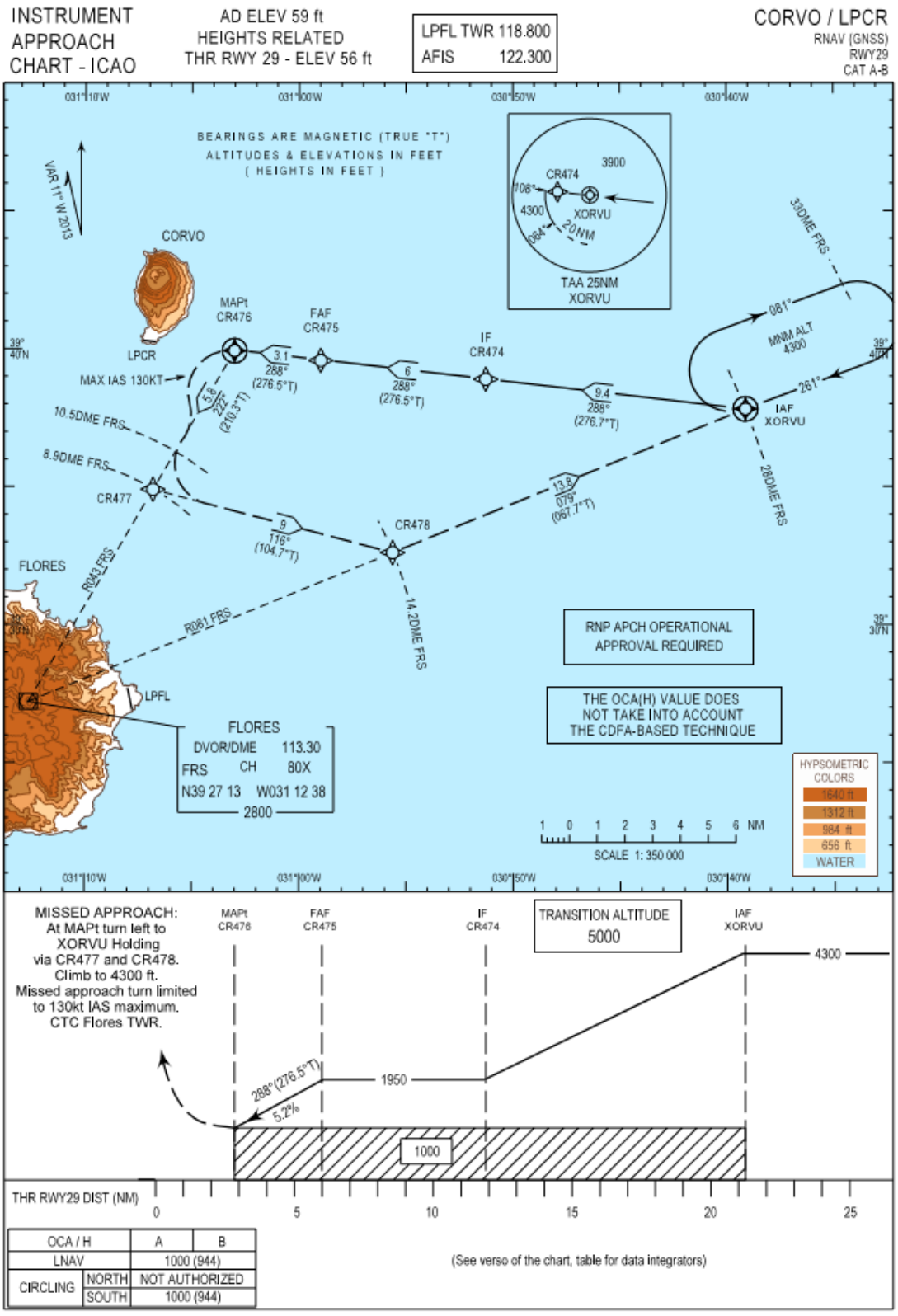

Figure 12: Example of Corvo instrument approach chart (source: NAV Portugal)

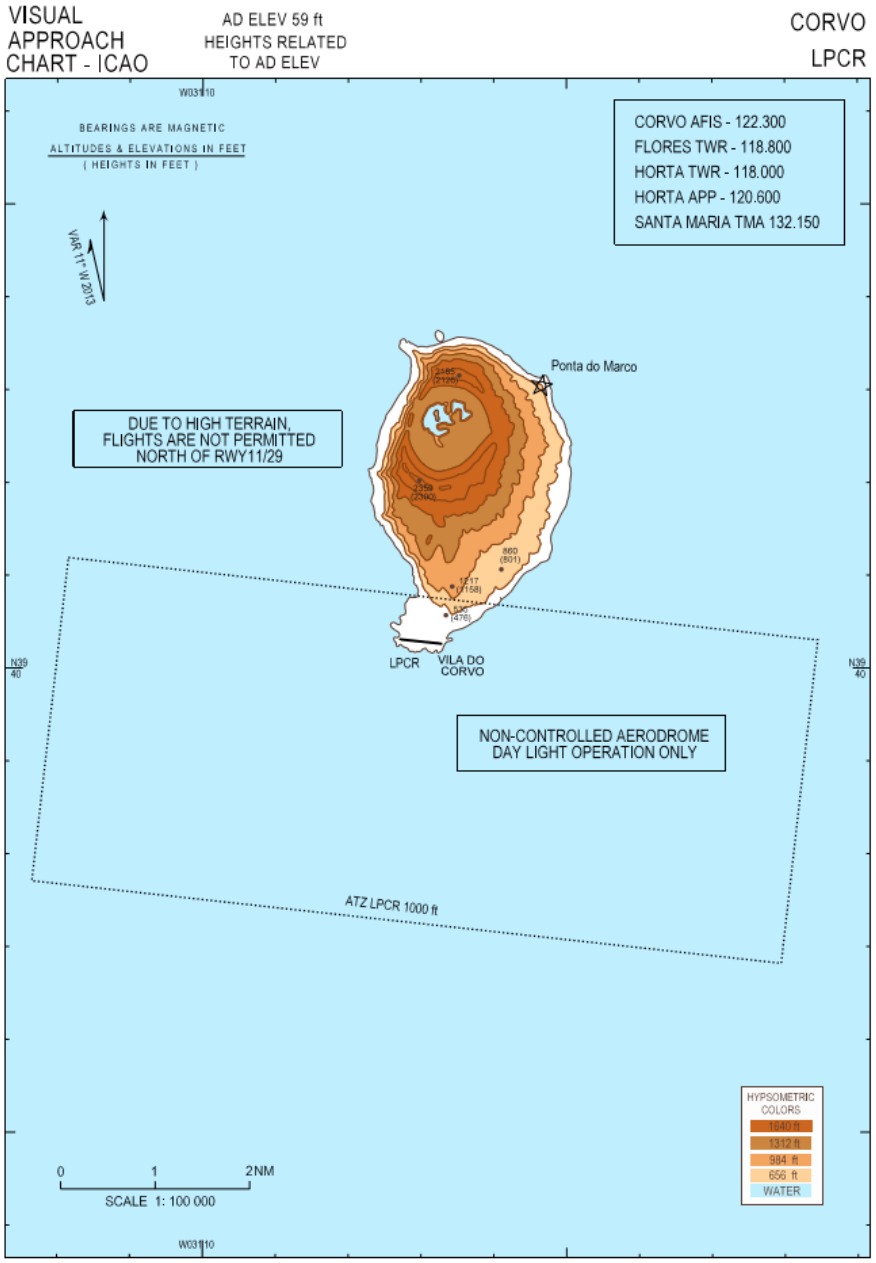

Figure 13: Example of Portugal ATZ of Corvo aerodrome (source: NAV Portugal)

Assessment: The Portuguese concepts were analysed. With regard to this, the introduction of IFR operations at uncontrolled aerodromes (Concept 1 and Concept 2) in the Czech Republic appears feasible.

3 Conclusions

These conclusions are based on the information available and given above.

As the concepts of operations (either Concept 1 or Concept 2) are practically the same in all analysed countries, there should be no legislative, operational or safety constraints for introducing IFR operations at uncontrolled aerodromes in the Czech Republic.

In Europe, it is possible to implement any instrument approach procedure at uncontrolled aerodromes with an AFIS and ICAO Annex 14 compliant runway (either non-instrument or non-precision).

4 Abbreviations and Definitions

ACC	Area Control Centre
AD	Aerodrome
AFIS	Aerodrome Flight Information Service
AGL	Above Ground Level
AIP	Aeronautical Information Publication
AMC	Acceptable Means of Compliance
APP	Approach
ATC	Air Traffic Control
ATS	Air Traffic Services
ATZ	Aerodrome Traffic Zone
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication (UK)
CBP	Cloud Break Procedures
CONOPS	Concept of Operations
CZCAA	Civil Aviation Authority of the Czech Republic
DFS	Deutsche Flugsicherung GmbH
EASA	European Aviation Safety Agency
EU	European Union
GM	Guidance Material
GND	Ground
GNSS	Global Navigation Satellite System
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
LNAV	Lateral Navigation
LNAV/VNAV	Lateral Navigation / Vertical Navigation
LOC	Localiser
LPV	Localiser Performance with Vertical Guidance
MAPt	Missed Approach Point
MTOW	Maximum Take-off Weight
N/A	Not Applicable
OPS	Operations
PAPI	Precision Approach Path Indicator
PBN	Performance Based Navigation
PLASI	Pulse Light Approach Slope Indicator
RMZ	Radio Mandatory Zone
RNAV	Area Navigation
RNP	Required Navigation Performance

RWY	Runway
SALS	Simple Approach Lighting System
SBAS	Satellite-Based Augmentation Systems
SCAT-I	Special Category 1
SERA	Standardised European Rules of the Air
TIA	Traffic Information Area
TIZ	Traffic Information Zones
TMA	Terminal Manoeuvring Area
TMZ	Transponder Mandatory Zone
TWR	Tower
VFR	Visual Flight Rules

Annex 1 National deviations from the requirements for an instrument runway valid in the Czech Republic

1. Introduction

In this survey, we focused on the comparison of different countries' aerodromes lighting equipment. The primary task was to examine whether aerodromes in the states covered by the EASA (European Aviation Safety Agency) are equipped in line with the minimum requirements currently set by the Czech regulations. Specifically, we searched among the aerodromes, which have published the straight-in instrument approach, but do not have the required lighting (glide slope lighting, approach lighting system, runway lighting). The survey is limited to aerodromes with the longest runway length not exceeding 1,500 m.

2. Data sources

The data was gathered from the ead.eurocontrol.int portal that provides access to the national Aeronautical Information Publications (AIP) of the individual countries that are EUROCONTROL members. For the purpose of this survey, we focused mainly on the part of the manual which contains the ICAO Aerodrome Chart and on the part of AD, specifically paragraph 2.14.

3. Equipment requirements according to Czech Aviation Regulation L14 (equivalent to ICAO Annex 14)

L 14, Chapter 5, para. 5.3.4.1: B - Non-precision approach runway: Where physically practicable, a simple approach lighting system as specified in 5.3.4.2 to 5.3.4.9 shall be provided to serve a non-precision approach runway, except when the runway is used only in conditions of good visibility or when sufficient guidance is provided by other visual aids. Note — It is advisable to give consideration to the installation of a precision approach category I lighting system or to the addition of a runway lead-in lighting system.

Para. 5.3.8.1: Runway threshold identification lights should be installed at the threshold of a non-precision approach runway when additional threshold conspicuity is necessary or where it is not practicable to provide other approach lighting aids.

Para. 5.3.5.1: A visual approach slope indicator system shall be provided, unless stipulated otherwise by the CAA, to serve the approach to a runway, whether or not the runway is served by other visual approach aids or by non-visual aids and where one or more of the following conditions exist:

a) the runway is used by turbojet or other aeroplanes with similar approach guidance requirements;
b) the pilot of any type of aeroplane may have difficulty in judging the approach due to:
    i. inadequate visual guidance as, for instance, is experienced during an approach over water or featureless terrain by day or in the absence of sufficient extraneous lights in the approach area by night; or
    ii. misleading information as is produced by deceptive surrounding terrain or runway slopes;
c) the presence of objects in the approach area may involve a serious hazard if an aeroplane descends below the normal approach path, particularly if there are no non-visual or other visual aids to give warning of such objects;
d) physical conditions at either end of the runway present a serious hazard in the event of an aeroplane undershooting or overrunning the runway; and
e) terrain or prevalent meteorological conditions are such that the aeroplane may be subjected to unusual turbulence during approach.

4. EASA member states

Although the total number of EASA Member States is currently 32, the attached table (Attachment 1) does not contain all of them. The reduction occurred during the search for aerodromes with a maximum runway length of 1,500 m. In the table, there are only states with aerodromes where a deviation from current requirements, laid down in the Czech Republic, was detected: France, Greece, Hungary, Iceland, Ireland, Italy, Netherlands, Portugal, Switzerland, United Kingdom.

5. Results

The attached table shows that in the EASA Member States there are many aerodromes that do not meet the minimum required equipment. The most representative appears to be France with a large number of aerodromes having published instrument approach procedures Type A, yet with no approach lighting system installed.

After checking the AIPs GEN 1.7, containing differences from ICAO standards, recommendations and procedures, interesting facts were identified. GEN 1.7 shows that at the French aerodromes, which have published instrument approach procedures Type A, it is not necessary to install an approach lighting system, and only runway threshold identification lights (paragraph 5.3.8.1) are recommended (see Attachment 2).

During the survey, a specific aerodrome was found, which has not established an approach lighting system, threshold identification lights or a visual approach slope indicator system. The aerodrome is Corvo (LPCS) in Portugal. An interesting fact is that Portugal AIP GEN 1.7 lists no deviations from the published ICAO standard Annex 14. We have not received an answer from Portugal yet.

Attachment 1 – Selected European airports having not some navigation lighting

Country	Aerodrome	RWY Length	RWY Width	ICAO code	APP Type	minima	ATS type	Approach lighting	RWY lighting*	Glide slope indicators*
France	Dieppe Saint Aubin	820	30	LFAB	NDB	510	AFIS	Nil	LIL	Nil
France	Amiens Glisy	1300	25	LFAY	LPV	350	AFIS	Nil	Yes	PAPI
France	Amiens Glisy	1300	25	LFAY	LNAV	510	AFIS	Nil	Yes	PAPI
France	Amiens Glisy	1300	25	LFAY	NDB	510	AFIS	Nil	Yes	PAPI
France	Muret Lherm	1100	30	LFBR	NDB	440	TWR	Nil	LIL	PAPI
France	Muret Lherm	1100	30	LFBR	LNAV	550	TWR	Nil	LIL	PAPI
France	Biscarrosse	1300	60	LFBS	NDB	500	TWR	Nil	LIL	PAPI
France	Cahors Lalbenque	1500	30	LFCC	NDB	440	AFIS	Nil	LIL	APAPI
France	Royan Medis	1255	30	LFCY	LNAV	390	AFIS	Nil	LIL	Nil
France	Royan Medis	1255	30	LFCY	NDB	400	AFIS	Nil	LIL	Nil
France	Pamiers Les Pujols	1300	30	LFDJ	NDB	510	AFIS	Nil	BI/LIL	Nil
France	Ouessant	833	24	LF	LPV	300	AFIS	Nil	LIL	PAPI
France	Ouessant	833	24	LFEC	NDB	630	AFIS	Nil	LIL	PAPI
France	Ile d'Yeu	1220	25	LFEY	LNAV	390	AFIS	Nil	LIL	Nil
France	Moulins Montbeugny	1300	30	LFHY	VOR	480	AFIS	Nil	LIL	PAPI
France	Moulins Montbeugny	1300	30	LFHY	LPV	300	AFIS	Nil	LIL	PAPI
France	Moulins Montbeugny	1300	30	LFHY	LNAV	310	AFIS	Nil	LIL	PAPI
France	Chalon Champforgeuil	1440	30	LFLH	NDB	520	AFIS	Nil	LIL	PAPI
France	Roanne Renaison	1460	30	LFLO	VOR	480	AFIS	Nil	LIL	PAPI
France	Mende Brenoux	1300	30	LFNB	LOC	890	AFIS	Nil	LIL	PAPI
France	Mende Brenoux	1300	30	LFNB	LPV	890	AFIS	Nil	LIL	PAPI
France	Mende Brenoux	1300	30	LFNB	LNAV	1070	AFIS	Nil	LIL	PAPI
France	Blois Le Breuil	1250	30	LFOQ	LNAV	340	AFIS	Nil	LIL	Nil

Country	Aerodrome	RWY Length	RWY Width	ICAO code	APP Type	minima	ATS type	Approach lighting	RWY lighting*	Glide slope indicators*
France	Blois Le Breuil	1250	30	LFOQ	NDB	520	AFIS	Nil	LIL	Nil
France	Cholet Le Pontreau	1380	30	LFOU	LNAV	410	AFIS	Nil	LIL	Nil
France	Cholet Le Pontreau	1380	30	LFOU	NDB	420	AFIS	Nil	LIL	Nil
France	Orleans St. Denis De L'Hotel	1392	30	LFOZ	LPV	300	AFIS	Nil	LIH	PAPI
France	Orleans St. Denis De L'Hotel	1392	30	LFOZ	NDB	350	AFIS	Nil	LIH	PAPI
France	Orleans St. Denis De L'Hotel	1392	30	LFOZ	LNAV	360	AFIS	Nil	LIH	PAPI
France	Toussus Le Noble	1100	30	LFPN	VOR/DME	350	TWR	Nil	LIH/LIL	PAPI
France	Toussus Le Noble	1100	30	LFPN	VOR	420	TWR	Nil	LIH/LIL	PAPI
France	Toussus Le Noble	1100	30	LFPN	LNAV	450	TWR	Nil	LIH/LIL	PAPI
France	Reims Prunay	1150	30	LFQA	LNAV	600	AFIS	Nil	LIL	PAPI
France	Reims Prunay	1150	30	LFQA	LPV	490	AFIS	Nil	LIL	PAPI
France	Besancon La Veze	1400	23	LFQM	NDB	1090	AFIS	Nil	LIL	PAPI
France	Besancon La Veze	1400	23	LFQM	LPV (3,6 %)	420	AFIS	Nil	LIL	PAPI
France	Le Mans Arnage	1420	30	LFRM	LPV	300	TWR	Nil	LIL	PAPI
France	Le Mans Arnage	1420	30	LFRM	LNAV	410	TWR	Nil	LIL	PAPI
France	Le Mans Arnage	1420	30	LFRM	LOC	430	TWR	Nil	LIL	PAPI
France	Le Mans Arnage	1420	30	LFRM	NDB	430	TWR	Nil	LIL	PAPI
France	Roanne Renaison	1460	30	LFLO	LNAV	410	AFIS	Nil	LIL	PAPI
Greece	Kithira	1461	30	LGKC	VOR/DME	625	AFIS	Nil	Yes	APAPI
Hungary	Békéscsaba	1300	30	LHBC	GNSS	360	AFIS	Nil	LIH	Nil
Hungary	Békéscsaba	1300	30	LHBC	NDB	360	AFIS	Nil	LIH	Nil
Iceland	Thorshofn	1199	30	BITN	NDB	336	AFIS	Nil	LIH	APAPI
Iceland	Thorshofn	1199	30	BITN	LNAV	349	AFIS	Nil	LIH	APAPI
Iceland	Isafjordur	1400	42,5	BIIS	LNAV	492	AFIS	Nil	Yes	Nil
Iceland	Isafjordur	1400	42,5	BIIS	NDB/DME (5,0 %)	492	AFIS	Nil	Yes	Nil

Country	Aerodrome	RWY Length	RWY Width	ICAO code	APP Type	minima	ATS type	Approach lighting	RWY lighting*	Glide slope indicators*
Iceland	Vestmannaeyjar	1160	45	BIVM	NDB	304	AFIS	Nil	Yes	PAPI
Iceland	Vestmannaeyjar	1199	45	BIVM	NDB	494	AFIS	Nil	Yes	PAPI
Iceland	Vopnafjordur	885	30	BIVO	LNAV 5,0	610	AFIS	Nil	LIM	PAPI
Iceland	Vopnafjordur	885	30	BIVO	NDB	980	AFIS	Nil	LIM	PAPI
Ireland	Sligo	1199	30	EISG	NDB/DME	509	TWR	Nil	Yes	PAPI
Ireland	Sligo	1199	30	EISG	NDB	1359	TWR	Nil	Yes	PAPI
Italy	Padova	1122	30	LIPU	NDB	556	AFIS	Nil	Yes	PAPI
Italy	Siena	1393	30	LIQS	VOR/DME	920	AFIS	Nil	Yes	PAPI
Netherlands	Lelystad/lelystad	1250	30	EHLE	NDB/DME	320	AFIS	Nil	Yes	PAPI
Netherlands	Lelystad/lelystad	1250	30	EHLE	NDB	900	AFIS	Nil	Yes	PAPI
Netherlands	Deventer	1199	27	EHTE	LNAV	540	AFIS	Nil	Yes	PAPI
Netherlands	Deventer	1199	27	EHTE	LPV	540	AFIS	Nil	Yes	PAPI
Portugal	Cascais	1400	30	LPCS	DVOR	700	TWR	Nil	Yes	APAPI
Portugal	Corvo	800	20	LPCR	LNAV	944	AFIS	Nil	Nil	Nil
Portugal	Graciosa	1268	30	LPGR	NDB	690	AFIS	Nil	Nil	PAPI
Switzerland	Lugano	1350	30	LSZA	IGS 6,65° 9,0	1250	TWR	Nil	Yes	PAPI
Switzerland	Lugano	1350	30	LSZA	LOC 5,4° 7,0	1790	TWR	Nil	Yes	PAPI
Switzerland	Grenchen	1000	23	LSZG	LPV 6,8	510	TWR	Nil	Yes	APAPI
Switzerland	Grenchen	1000	23	LSZG	LNAV 6,4	605	TWR	Nil	Yes	APAPI
Switzerland	Grenchen	1000	23	LSZG	VOR/DME	600	TWR	Nil	Yes	APAPI
United Kingdom	Scilly Isles/St Mary's	694	23	EGHE	NDB	418	TWR	Nil	Yes	PAPI
United Kingdom	Yeovil/Westland	1182	37	EGHG	NDB/DME	528	AFIS	Nil	Yes	Nil
United Kingdom	Yeovil/Westland	1182	37	EGHG	SRA RTR	528	AFIS	Nil	Yes	Nil
United Kingdom	Shoreham	1036	18	EGKA	LNAV 5,5	423	TWR	Nil	Yes	PAPI
United Kingdom	Shoreham	1036	18	EGKA	NDB/DME	473	TWR	Nil	Yes	PAPI
United Kingdom	Shoreham	1036	18	EGKA	LNAV	793	TWR	Nil	Yes	PAPI

Country	Aerodrome	RWY Length	RWY Width	ICAO code	APP Type	minima	ATS type	Approach lighting	RWY lighting*	Glide slope indicators*
United Kingdom	Shoreham	1036	18	EGKA	NDB/DME	853	TWR	Nil	Yes	PAPI
United Kingdom	Shoreham	1036	18	EGKA	VDF	893	TWR	Nil	Yes	PAPI
United Kingdom	Sumburgh	1500	45	EGPB	LOC/DME	280	TWR	Nil	Yes	PAPI
United Kingdom	Sumburgh	1500	45	EGPB	LOC/DME	309	TWR	Nil	Yes	PAPI
United Kingdom	Sumburgh	1500	45	EGPB	VOR/DME	529	TWR	Nil	Yes	PAPI
United Kingdom	Sumburgh	1500	45	EGPB	VOR/DME	880	TWR	Nil	Yes	PAPI
United Kingdom	Yeovil/Westland	1182	37	EGHG	LNAV	518	AFIS	Nil	Yes	Nil

* Explanatory Notes:
LIL - Light Intensity Low
LIH - Light Intensity High
LIM - Light Intensity Medium
PAPI - Precision approach path indicator
APAPI - Abbreviated precision approach path indicator

Attachment 2 – Differences to ICAO Annex 14 of ten states from Attachment 1

This attachment lists ten countries from Attachment 1 in which there are airports currently not meeting the requirements laid down in the Czech Republic. For each country, differences are indicated in the national version of Annex 14, section 5.3 of the original ICAO based on the AIPs section GEN part 1.7.

Hungary – no differences

Iceland – no differences

Ireland – no differences

Italy – no differences

Netherlands – Annex implementation under review; differences and significant differences to be determined.

Portugal – no differences

Greece

Annex 14 reference	
5.3.3.7	The effective intensity of the flash of the aerodrome beacons complies with the ICAO requirements of Annex 14, Volume I, First Edition, 1990.
5.3.6 and 5.3.7	Not applicable
5.3.8.1*	Runway threshold identification lights are also installed at non-instrument runways for better conspicuity due to local terrain conditions.

France

Annex 14 reference	CAT	Differences
5.3.3.12	B	Alternate means of compliance: France intends to apply this Provision to new facilities; in France, some already installed identification beacons show flashing-white rather than flashing-green.
5.3.4.1.B	**B**	**Alternate means of compliance: The French regulations do not require the regular provision of approach lighting systems for non-precision approach runways. The minimum operational conditions are adapted accordingly, in compliance with the European Regulations (JAR-OPS).**
5.3.4.1.C	**B**	**Alternate means of compliance: The French regulations do not require the regular provision of approach lighting systems for Category I precision approach runways. In the absence of approach systems, threshold identification lights are installed and operational restrictions are provided for runway use. The minimum operational conditions are adapted accordingly, in compliance with the European Regulations (JAR-OPS).**
5.3.4.1.D	B	Alternate means of compliance: The French regulations do not require the regular provision of approach lighting systems for Category III precision approach runways if they are not also used for Category II precision approaches.

5.3.4.10	**B**	**Alternate means of compliance: The French regulations do not require the regular provision of approach lighting systems for Category I precision approach runways. In the absence of approach systems, threshold identification lights shall be installed and operational restrictions are provided for runway use. The minimum operational conditions are adapted accordingly, in compliance with the European Regulations (JAR-OPS).**
5.3.4.17* 5.3.4.18	B	Alternate means of compliance: The French regulations provide for the possible implementation of consecutive lines of flashing lights when the centre line is made up of the light sources provided for in 5.3.4.14 a) and 5.3.14 a) in cases where the signalling system needs to be strengthened.
5.3.5.1 a)	**B**	**Alternate means of compliance: The French regulations do not require the regular provision of visual approach slope indicators to serve a runway used by turbojet or other aircraft with similar approach guidance requirements.**
5.3.9.8	B	Alternate means of compliance: The French regulations define the technical specifications specific to runways with night non-instrument runways. The equipment is approved by the State.
5.3.9.9	B	Alternate means of compliance: The French regulations define the technical specifications specific to runways with night non-instrument runways. The equipment is approved by the State.
5.3.12.3	B	Alternate means of compliance: Runway centre line lights are mandatory for take-off in low visibility when the RVR is lower than 250 m for aircraft of Categories A, B and C, and 300 m for aircraft of Category D.

Switzerland – no differences

United Kingdom – no differences