

Agreement number: INEA/CEF/TRAN/M2016/1352574
Action n°: 2016-HU-TMC-0279-W



Innovation and Networks Executive Agency

Department C - Connecting Europe Facility (CEF)

**AMENDMENT N° 1
TO AGREEMENT No INEA/CEF/TRAN/M2016/1352574**

The **Innovation and Networks Executive Agency (INEA)** ("the Agency"), under the powers delegated by the European Commission ("the Commission"), represented for the purposes of signature of this amendment by the Head of Department C of the Agency, Andreas Boschen,

on the one part,

and

1. HungaroControl (HungaroControl)

Public Law Body

Registration No 01-10-045570

Igló utca 33-35

H-1185 Budapest

Hungary

VAT No HU13851325

represented for the purposes of signature of this Agreement by Chief Technology Officer, Barnabás Kis and Chief Financial Officer, Szabolcs Czenthe

hereinafter referred to collectively as "the beneficiaries", and individually as "beneficiary" for the purposes of this Agreement where a provision applies without distinction between the coordinator or another beneficiary,

on the other part,

Having regard to the above-mentioned grant agreement concluded between the Agency and the beneficiary on 25/09/2017,

Whereas:

- (1) The beneficiary requested the Agency on 10/10/2018 to amend the above-mentioned Grant Agreement for regulatory and efficiency reasons requiring adaptations of the implementation plan regarding the number of obstacle databases and site surveys as well as a change of the foreseen locations for three of the monitoring and control stations.

- (2) The measures provided for in this amendment do not affect the award of the Union financial aid.

HAVE AGREED AS FOLLOWS:

Article 1

- (1) Annex I is replaced by the following text:

"

ANNEX I DESCRIPTION OF THE ACTION

ARTICLE I.1 – IMPLEMENTATION OF THE TEN-T NETWORK

The action contributes to the implementation of:

- the core network
- Horizontal priority: Single European Sky – SESAR system.

ARTICLE I.2 – LOCATION OF THE ACTION

- I.2.1 Member State(s): Hungary
- I.2.2 Region(s) (using the NUTS2 nomenclature): Dél-Alföld (HU33), Dél-Dunántúl (HU23), Közép-Dunántúl (HU21), Nyugat-Dunántúl (HU22), Észak-Alföld (HU32)
- I.2.3 Third country(ies): not applicable

ARTICLE I.3 – SCOPE AND OBJECTIVES OF THE ACTION

In order to accomplish the Performance Based Navigation (PBN) mandate, Hungarocontrol has to implement PBN procedures in all Hungarian public airports. At the moment, PBN procedures are only implemented at Budapest Airport, where an LPV200 procedure was published in September 2016.

Within this Action, Hungarocontrol will implement PBN procedures with vertical guidance in 7 public airports (Gyor/Per, Heviz/Balaton, Debrecen, Pecs, Szeged, Nyiregyhaza and Bekescsaba) and 3 military airports (Papa, Kecskemet, Szolnok).

As a result of this Action, 100 % of public airports in Hungary will be compliant with PBN requirements. By enabling PBN approaches at all major Hungarian airports, Hungary will have provided the opportunity for all airspace users to land by utilising Global Navigation Satellite System (GNSS) technology throughout Hungary. This will be an important step towards the full roll-out of PBN technology within Europe. Moreover, PBN approaches will entail considerable benefits in the domains of capacity, safety, cost-efficiency and the environment.

ARTICLE I.4 – ACTIVITIES

I.4.1 Activities timetable

Activity number	Activity title	Indicative start date	Indicative end date	Milestone number
1	Project management and communication	01/09/2017	29/02/2020	1, 2
2	Procedure design	01/09/2017	29/02/2020	3, 4, 5, 6, 7, 8
3	Flight validation	01/11/2017	01/11/2019	9, 10
4	GNSS network specification, procurement, deployment and operation	01/09/2017	29/02/2020	11, 12, 13

I.4.2 Activities description

Activity 1: Project management and communication

The specific objective of this Activity is to ensure the technical, administrative and financial implementation of the Action in accordance with the related regulations and programme requirements, the timely coordination and monitoring of the activities as well as communication.

Communication initiatives will ensure the visibility of the Action in accordance with the publicity requirements for CEF funding. Target groups are the national and European industry stakeholders, relevant policy and decision makers as well as the general public. The Activity will provide for the visibility of the Action through press releases as well as locally displayed billboards, plaques etc.

The expected results of this Activity are:

- Interim and final reports prepared and submitted
- Consultation and close cooperation ensured with national authorities and INEA
- Regular meetings organised with regulatory authorities
- Press release published at the beginning of the Action (milestone 1)
- Press release published at the end of the Action (milestone 2)

HungaroControl has established a dedicated project team for the implementation of the Action. The team consists of members of the Technological Development Division and the ATM Directorate, mainly responsible for the technical implementation, of personnel from the SQM Department responsible for quality and risk monitoring issues and of experts from the Financial Department. The joint cooperation of the departments will be led by a dedicated project manager, who will oversee the execution of the work packages, delegates tasks and monitors the progress. The project team will regularly report to the project manager. The project manager will also periodically consult the quality manager who will ensure several cross-checks. Furthermore, due to Member State requirements, regular project progress reports will also be prepared and submitted to the CEF Department of the Ministry of National Development.

Activity 2: Procedure design

The specific objective of this Activity is the procedure design for ten airports. The related activities also include the relevant safety assessments and the publication of the procedures in the

Aeronautical Information Publication (AIP).

In order to be able to design procedures for the selected airports, obstacle databases have to be created in line with the Aeronautical Data Quality (ADQ) implementing regulation 73/2010. These databases include the exact location and height of the relevant obstacles (e.g. chimneys, mountain tops, hydroglobuses) at and around the aerodrome. Only when this data is available, the procedure design can start. Adherence to the requirements of the ADQ implementing regulation will vouchsafe for the reliability and integrity of the data. The obstacle databases for 5 airports will be provided by the Action, i.e. including the procurement of these 5 databases. The remaining 5 databases are already available and are therefore not part of the Action. Eventually, all 10 airports will be covered through a country wide database.

For the design of the procedures, 3D trajectories are to be designed, leading the aircraft to land at the aerodrome. The aircrafts utilising these trajectories and using performance based navigation via the European Geostationary Navigation Overlay Service (EGNOS) enhanced GPS navigation will therefore have the assurance that the environment and airspace they use are free of obstacles so that they can land safely. The procedure design charts which will be produced in this context can be used by airlines for navigation purposes after their publication in the Aeronautical Information Publication (AIP). The charts will be validated by independent experts.

Moreover, it has to be ensured that the new procedures are safe for use by the aviation community. The main tasks include functional hazard analysis (FHA), preliminary safety analysis (PSSA) and system safety analysis (SSA). The active participation of safety experts, with a good command of the relevant safety methodology, as well as inputs provided by the procedure designers ensures the necessary holistic approach and the reliability of the results.

The expected results of this Activity are:

- Site surveys completed in 2017 (milestone 3)
- Site surveys completed in 2018 (milestone 4)
- Procedure design completed in 2017 (milestone 5)
- Procedure design completed in 2018 (milestone 6)
- Procedure design completed in 2019 (milestone 7)
- Publication of procedures in the AIP (milestone 8)

Activity 3: Flight validation

The specific objective of this Activity is to check the adequacy of the new procedures from a flyability perspective. Depending on the characteristics of the aerodrome and hence the types of aircraft able to serve the given airport, this can be done either by simulations or by flight trials. The most suitable method will be chosen in each case.

The expected results of this Activity are:

- Flight validation completed in 2018 (milestone 9)
- Flight validation completed in 2019 (milestone 10)

Activity 4: GNSS network specification, procurement, deployment and operation

The specific objective of this Activity is the Global Navigation Satellite System (GNSS) network specification (both hardware and software), procurement, deployment and operation. A signal-in-space performance assessment will be carried out by a monitoring network which will be installed at the selected locations and a central monitoring and control station will be installed at

HungaroControl's headquarters where the collected data will be analysed during the operational phase.

The expected results of this Activity are:

- GNSS monitoring system specification drafted (milestone 11)
- Procurement of GNSS equipment (milestone 12)
- GNSS monitoring equipment deployed (milestone 13)

ARTICLE I.5 – MILESTONES AND MEANS OF VERIFICATION

Milestone number	Milestone description	Indicative completion date	Means of verification
1	Project Kick-off	31/12/2017	Copy of Press release published
2	Dissemination of the results of the Action	29/02/2020	Copy of Press release published
3	Site surveys completed in 2017 for at least one airport	31/12/2017	Certificate of performance signed by HungaroControl
4	Site surveys completed in 2018 for at least four airports	31/12/2018	Certificate of performance signed by HungaroControl
5	Procedure design completed in 2017 for at least one airport	31/12/2017	Approach procedures charts validated by independent experts
6	Procedure design completed in 2018 for at least 5 airports	31/12/2018	Approach procedures charts validated by independent experts
7	Procedure design completed in 2019 for at least 4 airports	01/07/2019	Approach procedures charts validated by independent experts
8	Procedures published in the AIP	29/02/2020	Civil Aviation Authority (CAA) acknowledgement for all 10 airports
9	Flight Validation completed in 2018 for at least 5 airports	31/12/2018	Flight validation reports delivered to the Civil Aviation Authority (CAA)
10	Flight Validation completed in 2019 for at least 5 airports	01/11/2019	Flight validation reports delivered to the Civil Aviation Authority (CAA)
11	GNSS monitoring system specification drafted	31/12/2017	Technical specification document approved

				by independent experts
12	Procurement of GNSS equipment concluded	31/07/2018		Contract(s) awarded
13	GNSS monitoring equipment deployed	31/12/2018		Initial status report validated by independent experts

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(2) Annex III - Table 2 "Indicative breakdown per activity and per beneficiary of estimated eligible costs of the action (EUR)" is replaced by the following table:

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Activities	2017	2018	2019	2020	Total
ELIGIBLE DIRECT COSTS					
Activity 1	4,000	4,000	2,000	3,000	13,000
Activity 2	91,400	253,990	139,990	5,000	490,380
Activity 3	5,000	20,000	35,000	0	60,000
Activity 4	10,000	170,000	60,000	10,000	250,000
TOTAL ELIGIBLE DIRECT COSTS	110,400	447,990	236,990	18,000	813,380
ANNUAL INSTALMENTS OF MAXIMUM CEF CONTRIBUTION	517,131.50	0	158,941.5	15,300	691,373

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Article 2

All the other provisions of the grant agreement shall remain unchanged.

Article 3

The present amendment shall form an integral part of the grant agreement and it shall enter into force on the date on which it is signed by the last party.

SIGNATURES

For the beneficiary



Barnabás Kis

For the Agency



Andreas Boschen



Szabolcs Czenthe

06/03/2019

Done at Budapest, on

Done at Brussels, on

Budapest

06/03/2019

In duplicate in English.