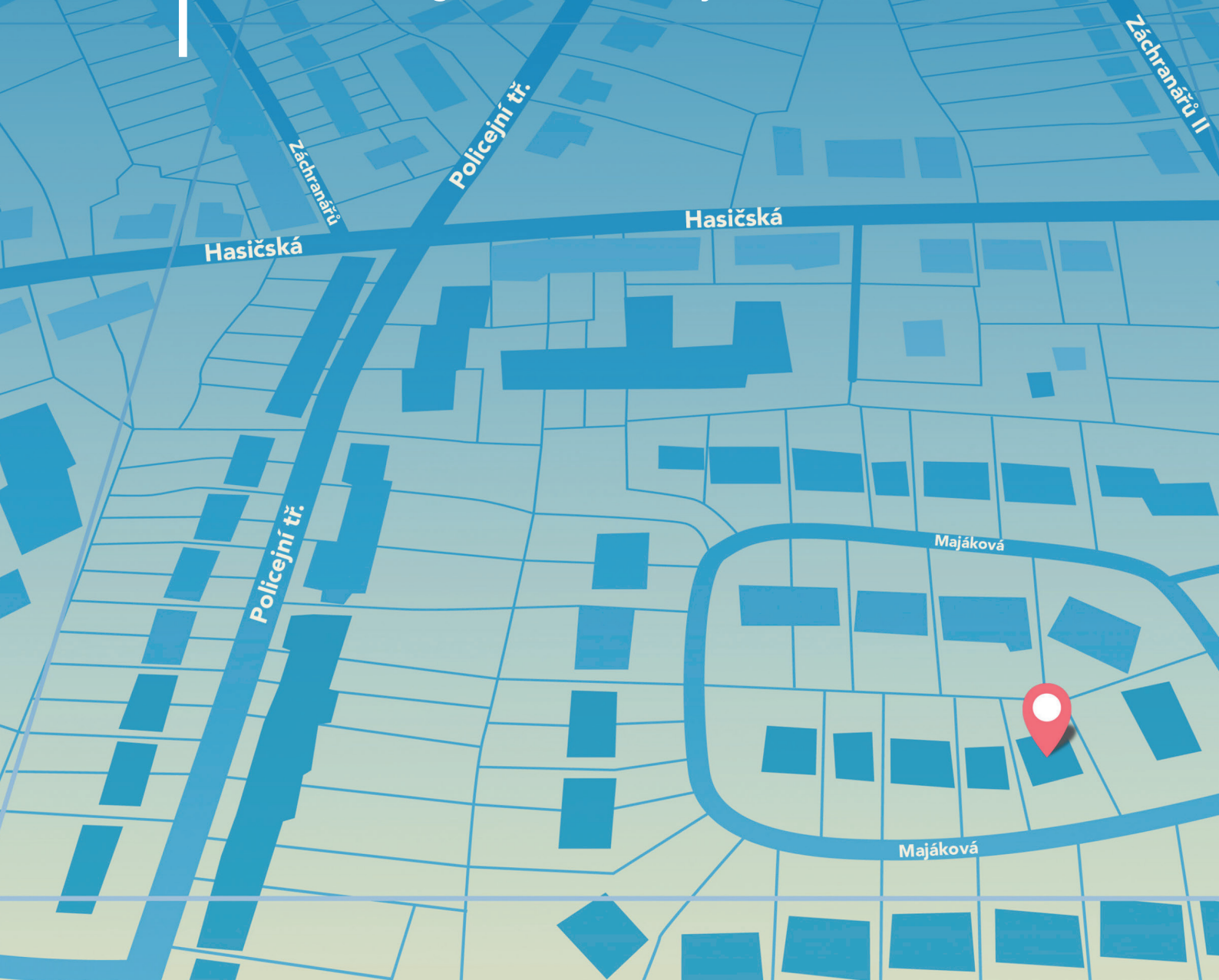


Uniform level of operational  
management information systems  
and upgrading technology to receive  
emergency calls for basic components  
of the Integrated Rescue System



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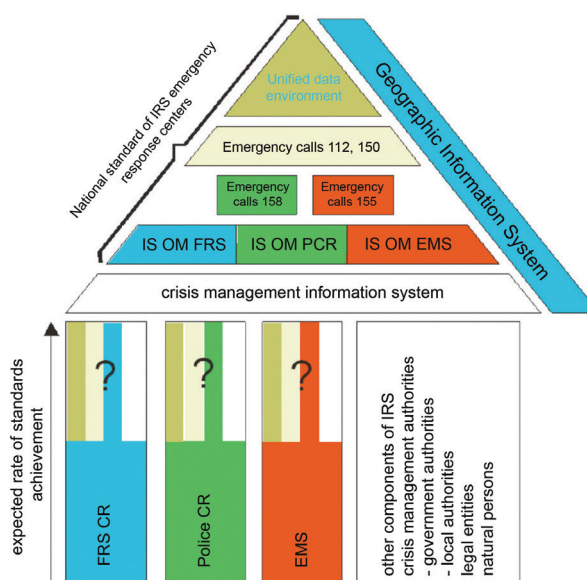
<http://is-izs.izscr.cz>

<http://www.hzscr.cz>

## Introduction

Fire and Rescue Service of the Czech Republic, Police of the Czech Republic and regional emergency medical services prepared an implementation of financial program "Uniform level of operational management information systems and upgrading technology to receive emergency calls for basic components of the Integrated Rescue System" (hereinafter referred to as „Program IS IRS“). The program IS IRS consists of a project called the National Information System of Integrated Rescue System, central standardized projects of General Directorate of Fire and Rescue Service of the Czech Republic and the Police Presidium of the Czech Republic and projects at the regional level (regional standardized projects of basic components of the Integrated Rescue System). The guarantor of the whole program IS IRS is the Ministry of Interior - General Directorate of Fire and Rescue Service of the Czech Republic.

The program IS IRS consists of a total of 45 subprojects, 42 of which are funded from the Integrated Operational Programme, Priority Axis 3 - Improving the quality and accessibility of public services – objective Convergence, support area 3.4 - Services in the field of security, risk prevention and risk management. The aim of the program IS IRS is increasing the quality of services provided to citizens in the area of emergency calls, operational management and interoperability of basic components of the Integrated Rescue System.



# National Information System of Integrated Rescue System

The overall outcome of the project is operational National Information System of Integrated Rescue System, which is used by all basic components of Integrated Rescue System when receiving emergency calls and subsequent dispatch of forces and means to incidents.

## Project benefits

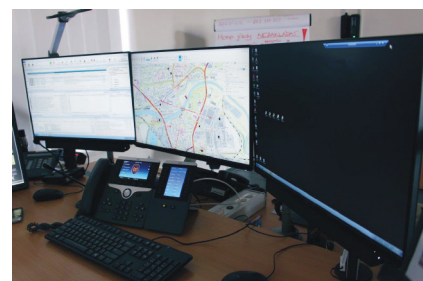
A key benefit of the project is to accelerate and streamline cooperation of emergency response centers of basic components of Integrated Rescue System, which will be reflected mainly by accelerating intervention in emergencies and providing faster assistance to citizens.

**From the perspective of basic components of Integrated Rescue System**, the main benefit of the project is the possibility of effective exchange and sharing of data and information, the possibility of better coordination.

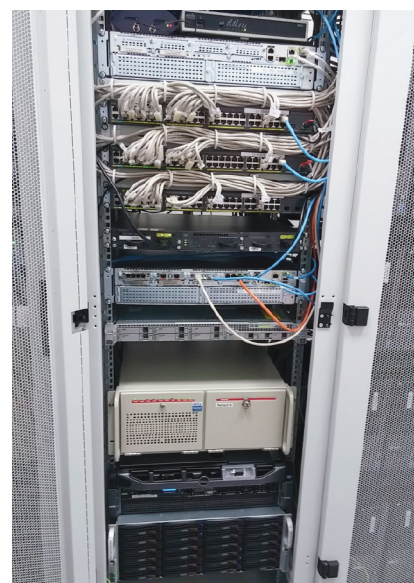
**From the perspective of the customer** - citizen is the main benefit of the project to mitigate the effects of emergencies in case of common actions of Integrated Rescue System through faster and more coherent interventions. This allows fully accessible emergency call, precise determination of the place of incident, the immediate launch of the necessary emergency services and faster transportation to the place of incident.

The main objective of the project is to provide the infrastructure necessary to set uniform level of operational management information systems. Construction of the National Information System of Integrated Rescue System is divided into three technological blocks:

- Integration platform - management of data exchange of basic components of Integrated Rescue System
- GIS - Geographic Information System
- Operational situation visualization



*Emergency response center FRS South Bohemian Region*



*Network components of ERC FRS South Moravian Region*

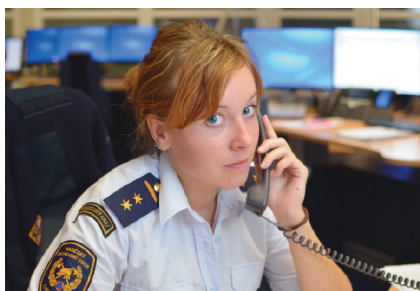




*Operations Officer of FRS  
Hradec Králové Region*



*Emergency response center  
FRS Vysočina Region*



*Operations Officer of FRS Cent-  
ral Bohemian Region*

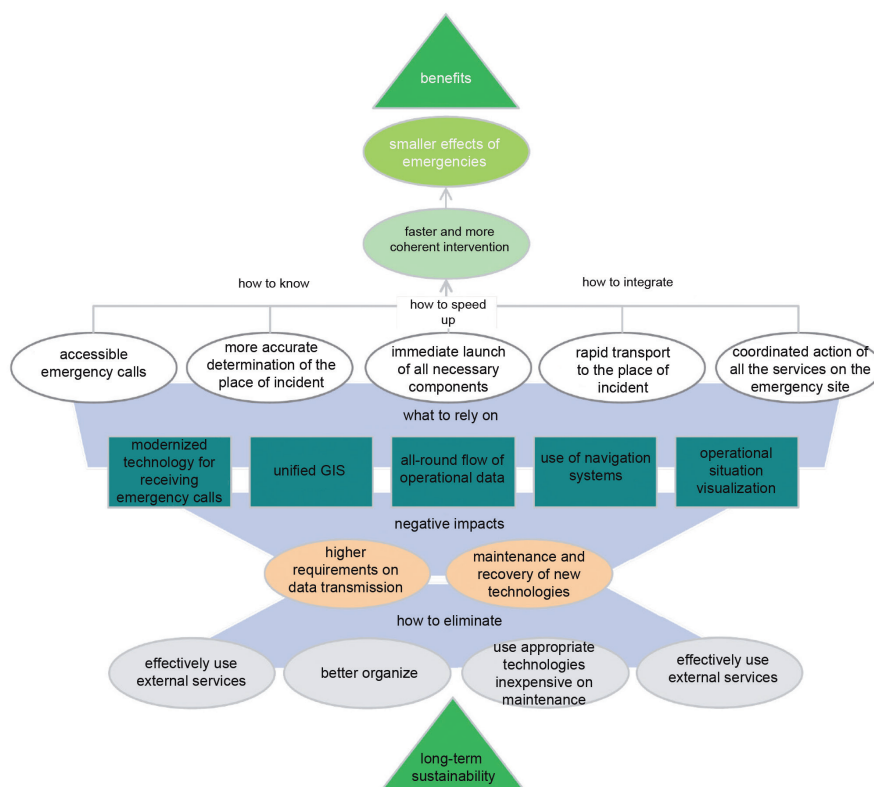
## Project outputs

The basic outcome of the project is to create a unifying technology platform for system data exchange between basic components of Integrated Rescue System. Other outputs of the project are to streamline emergency call receiving and accelerate the response time of basic components of Integrated Rescue System on an emergency call.

## Project objectives

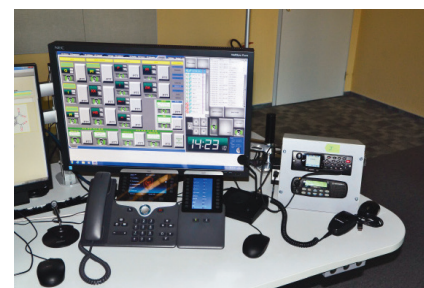
The main objectives of the project were developed during the analytic work into the following specific objectives:

- Improve the accuracy of localization of emergencies
- Accelerate the launch of necessary basic components of Integrated Rescue System
- Shorten time to transport forces and means to the place of incident
- Ensure the use of Integrated Telecommunication Network of the Ministry of Interior by all components of Integrated Rescue System
- Provide consistent Geographic Information System
- Ensure all-round flow of operational data
- Create conditions for the use of navigation systems
- Ensure sharing of operational situation visualization
- Not to raise the operating costs of Integrated Rescue System



## Regional standardized projects and central standardized project

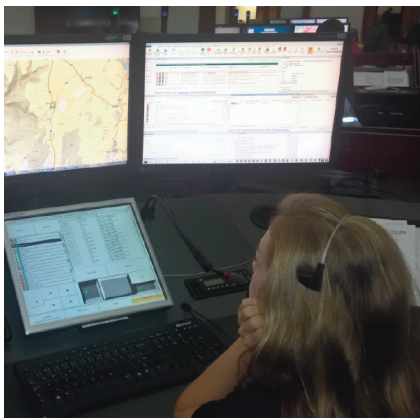
Implementation of regional standardized projects of regional Fire and Rescue services and central standardized project of General Directorate of Fire and Rescue Service of the Czech Republic is focused on the construction or improvement of emergency response centers information systems in order to ensure the operation of information and communication networks and services of Fire and Rescue Service of the Czech Republic and achieve perfect connection of all basic elements of Integrated Rescue System among themselves regardless of their location and thus ensure high operability and interoperability.



*Communication equipment of ERC FRS Liberec Region*



*Technology of FRS Olomouc Region*



*Emergency response center FRS Moravian-Silesian Region*

## Projects benefits

Regional standardized projects of regional Fire and Rescue services and central standardized project of General Directorate of Fire and Rescue Service of the Czech Republic directly use the unified data and communication environment created within the project National Information System of Integrated Rescue System, which ultimately reduce the response time to emergency calls and deploying forces and means. Standardized implementation of regional standardized projects of regional Fire and Rescue services and central standardized project of General Directorate of Fire and Rescue Service of the Czech Republic contributes to fulfilling the mission and purpose of the Integrated Rescue System, which is to ensure the best possible service to the public in the area of health, life, property and the environment protection.

## Projects outputs

Outputs of regional standardized projects of regional Fire and Rescue services and central standardized project of General Directorate of Fire and Rescue Service of the Czech Republic provide for timely and effective response to increasing threats and consequences of natural and technological hazards that can be avoided or solved by providing a high level of agility and efficiency of the operational management of the Fire and Rescue Service of the Czech Republic within basic components of Integrated Rescue System.

These include the need for early intervention on the site of emergency. In the framework of regional standardized projects of regional Fire and Rescue services and central standardized project of General Directorate of Fire and Rescue Service of the Czech Republic new technologies were acquired for the operational management, connected to the technology built from a project National Information System of Integrated Rescue System aimed at ensuring better support for extracting information from emergency call, ensure higher efficiency of the operational management and deployment of forces and means, increase operational overview of the situation, shortening travel times of forces and means and ensure interoperability at the level of regional Fire and Rescue Services, but also among the other basic components of Integrated Rescue System.

## Project objectives

The objectives of regional standardized projects of regional Fire and Rescue services and central standardized project of General Directorate of Fire and Rescue Service of the Czech Republic were set on basis of the results of the analysis of interoperability at three levels:

### **A: Standards of operational management**

Standards applicable to all basic components of Integrated Rescue System to the level of regions

### **B: Standards for operational management of emergency services**

Standards applicable to the relevant basic component of Integrated Rescue System

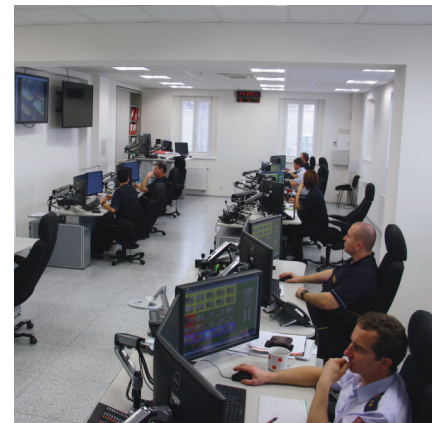
### **C: Regional Standards**

Own standards at the regional level of basic component of Integrated Rescue System.

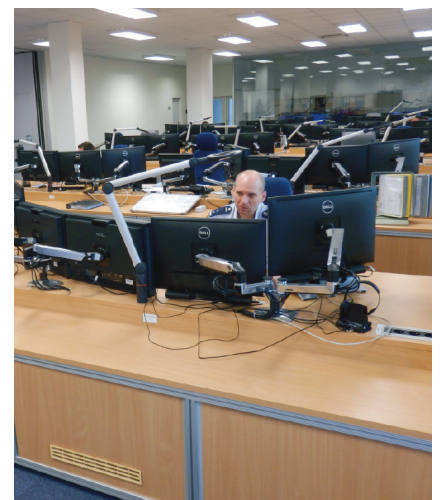
The analysis of interoperability aimed to define common standards and ensure consistency of standardized regional projects with a project National Information System of Integrated Rescue System.



*Intervention tablet FRS  
Pardubice Region*



*Emergency response center FRS  
Plzeň Region*



*Emergency response center FRS  
Ústí nad Labem Region*





*Technology of FRS Karlovy Vary Region*



*Intervention tablet FRS Zlín Region*



*Operations Officer of General Directorate of FRS*

Implementation of regional standardized projects of regional Fire and Rescue services and central standardized project of General Directorate of Fire and Rescue Service of the Czech Republic focused on the following objectives:

- Improve the assistance to citizens in emergencies
- Increase the efficiency of operational management
- Increase the efficiency of receiving emergency calls
- Improve the accuracy of localization of emergencies
- Accelerate the launch of necessary basic components of Integrated Rescue System
- Not to raise the operating costs of Integrated Rescue System
- Shorten time to transport forces and means to the place of incident
- Ensure the use of Integrated Telecommunication Network of the Ministry of Interior by all components of Integrated Rescue System
- Provide consistent Geographic Information System
- Ensure all-round flow of operational data
- Create conditions for the use of navigation systems
- Ensure sharing of operational situation visualization

## Practical implications of implementing the program IS IRS

Description of case type in which implemented system significantly significantly accelerates and streamlines joint response of emergency services:

### Traffic accident

**Prior to the implementation:** You have become involved in an accident with serious injury. The person is trapped in a crashed car. Therefore you are calling an emergency number 155. The EMS dispatcher will instruct you about the resuscitation, records an event in his information system and sends the ambulance to the place of incident. The dispatcher transmits information about a serious accident by phone to the emergency response centers of Police and subsequently to Fire and Rescue Service of the Czech Republic. The fire brigade leaves to the place of traffic accident about 4 minutes later than ambulance. After arrival at the place, the crew of ambulance finds that they could not get the wounded person from the vehicle, assistance to the injured driver is very complicated and paramedics must wait for the arrival of firefighters. Firefighters arrived on the spot six minutes after the arrival of the ambulance. Police patrol also arrives to the place. Firefighters extricate the injured driver and police officers are directing the traffic on accident site. Fortunately, damaged car did not ignite.

**Upon completion of the program:** During the same event, you call emergency number 155. The EMS dispatcher will instruct you about the resuscitation, records an event in his information system and by one click requests automatically

the cooperation of other components of Integrated Rescue System. Position of a traffic accident is immediately displayed on maps and information systems of all three basic components of Integrated Rescue System that depart simultaneously and almost at the same time arrives to a site of traffic accident and intervene.

### Injured person in inaccessible terrain

**Prior to the implementation:** Woman announces bypassing patrol of Police, that she saw the motionless body in the woods. Patrol announces the situation to emergency response center, and drives the woman to the place. On the site they discover that it is probably an unconscious man who fell off a cliff, but they are not able to get to him. The patrol informs emergency response center about the situation. Police operations center requires cooperation of firefighters and emergency medical services. Given the complex way of arrival to the venue, firefighters and paramedics fail to find the right path toward events and police patrol must go lead them. Driving time is extended by precious minutes before the man gets help.

**Upon completion of the program:** In the same situation emergency response center of Police identifies the event location with automatically transmitted police vehicle position and this position passes with a cooperation request to emergency response centers of Fire and Rescue service and emergency medical services. The position of police patrols is visible to firefighters and paramedics in their vehicles on tablets and without problems they get quickly to the right place. Man is rescued.

## Industrial building fire

**Prior to the implementation:** Factory fire is reported to 112. Upon arrival firefighters discover toxic substances burn, they evacuate people from the building and call for backup units, ambulances and the police. It is necessary to define the danger zone and close certain roads. Transport of backup units to the place of incident is difficult because they have no information on where is the place to gather vehicles, which roads are closing, and where is the command post. They try to get required information from emergency response centers. The backup units may accidentally drive into danger area. On-site coordination and emergency response centers lack of basic information, radio communications traffic is overloaded with messages and the situation is very unclear for the first 60 minutes.

**Upon completion of the program:** In the same situation the incident commander indicates his post through the tablet, in agreement with the police decides about the closure of some roads and marks those closures into a map with a tablet. At the same time he evaluates boundaries of the danger zone and indicates it into a map. This information is automatically transferred to all emergency response centers of participating components of Integrated Rescue System and tablets in their vehicles. Backup units choose safe routes for approaching and commute directly and quickly to designated areas of gathering. Incident commander and his staff have an overview of where vehicles of Integrated Rescue System currently are. Police patrols control road closures, ambulances have no problems to find a place of injured people concentrating.

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Incident commander has automated comprehensive overview of the overall situation in the place of action, can make better decisions about dealing with emergencies. Radio communications can be better utilized for rescue and extinguishing.

# List of supported projects

Project name	Registrační číslo projektu	Grant recipient
National Information System of Integrated Rescue System	CZ.1.06/3.4.00/11.07071	Ministry of Interior – General Directorate of Fire and Rescue Service of the Czech Republic
Central standardized project of General Directorate of Fire and Rescue Service of the Czech Republic	CZ.1.06/3.4.00/11.07834	Ministry of Interior – General Directorate of Fire and Rescue Service of the Czech Republic
Regional standardized project of Fire and Rescue Service of Central Bohemian Region	CZ.1.06./3.4.00/11.07810	Fire and Rescue Service of Central Bohemian Region
Regional standardized project of Fire and Rescue Service of South Bohemian Region	CZ.1.06./3.4.00/11.07793	Fire and Rescue Service of South Bohemian Region
Regional standardized project of Fire and Rescue Service of Plzeň Region	CZ.1.06./3.4.00/11.07789	Fire and Rescue Service of Plzeň Region
Regional standardized project of Fire and Rescue Service of Karlovy Vary Region	CZ.1.06./3.4.00/11.07768	Fire and Rescue Service of Karlovy Vary Region
Regional standardized project of Fire and Rescue Service of Ústí nad Labem Region	CZ.1.06./3.4.00/11.07761	Fire and Rescue Service of Ústí nad Labem Region
Regional standardized project of Fire and Rescue Service of Liberec Region	CZ.1.06./3.4.00/11.07820	Fire and Rescue Service of Liberec Region
Regional standardized project of Fire and Rescue Service of Hradec Králové Region	CZ.1.06./3.4.00/11.07811	Fire and Rescue Service of Hradec Králové Region
Regional standardized project of Fire and Rescue Service of Pardubice Region	CZ.1.06./3.4.00/11.07812	Fire and Rescue Service of Pardubice Region
Regional standardized project of Fire and Rescue Service of Vysočina Region	CZ.1.06./3.4.00/11.07780	Fire and Rescue Service of Vysočina Region
Regional standardized project of Fire and Rescue Service of South Moravian Region	CZ.1.06./3.4.00/11.07817	Fire and Rescue Service of South Moravian Region
Regional standardized project of Fire and Rescue Service of Zlín Region	CZ.1.06./3.4.00/11.07769	Fire and Rescue Service of Zlín Region
Regional standardized project of Fire and Rescue Service of Olomouc Region	CZ.1.06./3.4.00/11.07760	Fire and Rescue Service of Olomouc Region
Regional standardized project of Fire and Rescue Service of Moravian-Silesian Region	CZ.1.06./3.4.00/11.07821	Fire and Rescue Service of Moravian-Silesian Region

Projects of program IS IRS were co-financed by the European Union through the European Regional Development Fund.