User-friendly Information Tool on Urban and Regional Access Regulations Schemes

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Deliverable D2.3 - UVAR tool package + development report

Contents

Administrative section

Document bios

Document file name	Work package	Tasks
UVARBox_WP2_Deliverable2.3_08-2022_1.0	WP2	T2.2

Version history

Version	Date	Description of changes	Author	Partner
0.1	20.04.2022	First draft	Thomas Piribauer	PRISMA
0.2	10.06.2022	Consolidation of inputs	Thomas Piribauer	PRISMA
1.0	01.08.2022	General revision	André Calçada and César Neves	ARMIS

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About this document

The purpose of this deliverable is to provide the tool package and the development report. It is closely related to other deliverables of WP2, especially D2.2 Functional specification of the tool and D2.5 Technical documentation and user documentation of UVAR tool.

General section

1 Tool package

The tool package contains all the sources needed for building and deploying the UVAR Box Tool. It includes scripts to compile the software and sample configuration files. The releases of the tool package are available on the internal project share and will be published open source on a suitable repository (e.g. github) to allow further development after the project lifetime. The tool package is accompanied by the respective technical documentation and user documentation (D2.5).

2 Development report

2.1 UVAR Box Tool

The UVAR Box Tool builds upon the works done in other work packages (e.g. regarding the definition of the UVAR Box data model (DATEX II), see D1.2 and D1.3) and follows a generic approach on how to use and manage this information. It is designed as a Client/Server Web-application which communicates via REST Interfaces. The client is developed as a single-page web application and hence can be used with standard web-browsers. For further information about the used frameworks/libraries for implementing the tool please see the technical documentation (D2.5).

The UVAR Box Tool allows to generate UVAR machine readable data in DATEX II format and supports various use cases (e.g. import and export of UVAR data, manual data entry, integration in 3rd party applications). For details regarding use case definition and implementation please see the functional specification (D2.2) and the user documentation (D2.5).

2.2 Development process

2.2.1 Agile software development

An agile approach was adopted during the development of the UVAR Box Tool. Based on the works of Task 2.1 use cases and functionalities have been defined and were documented as part of the functional specification (D2.2). This was accompanied by a continuous discussion process with the respective task members. After the design of the software the features of the tool were continuously implemented, demonstrated to the project partners and made available for testing. In this way feedback cycles were kept short and allowed efficient adaptations of the implemented functionalities.

The software development process followed some of the basic principles of Scrum and was supplemented with adaptations where appropriate. The requirements were documented in the respective UVAR product and sprint backlogs. For this purpose, an agile project management tool was used to allow issue and project tracking. The process was accompanied by the respective development

team meetings (daily, sprint planning, sprint review and retrospective) to continuously improve the software development process.

2.2.2 Software testing

The software was continuously tested by utilizing automated and manual unit, integration and system tests with test and real data. Acceptance tests were mainly carried out by the software development team, the task members and the Country Coaches. Feedback was gathered and prioritized to decide on adaptations of the software in terms of benefits for the project under consideration of available resources.

2.2.3 Configuration of the tool

The configuration functionality of the tool allows for flexible configuration dependent on the setting in which the tool is deployed. Some basic configurations were defined during software development to provide with the tool package and for further usage on the UVAR Box server. These contain the following configuration and resource-files:

- client: parameterizes client-side components like the map
- server: parametrizes the server-side components
- language files for internationalisation: provide text labels for the user-interface in different languages
- layout: define the appearance of the UVAR form elements
- resources: XSD-Schema files

When deploying the tool, these basic configurations have to be checked and adapted to fit the needs of the tool audience.

2.2.4 Deployment of the tool

During software development, the tool was deployed on a test server hosted by project partner PRISMA Solutions to allow easy publishing of tool increments in short cycles by the software development team. The UVAR Box Tool on the test server was used by project partners and Country Coaches to test the functionalities of the tool, generate UVAR test data and to demonstrate the tool.

The UVAR Box Tool for collecting UVAR data has been deployed on the official UVAR Box server hosted by project lead ARMIS.

2.3 Accompanying tasks

Software development was accompanied by additional tasks to spread knowledge about the tool and its functionalities. Technical documentation was written to allow administrators of the tool to understand the technical principles and configuration possibilities of the software. This was especially helpful to guide through the process of deploying the tool on the UVAR Box server. A user manual was set up to give

guidance to tool users and made available directly on the tool. An instructional video was created together with work package 5 and project partner POLIS to demonstrate the main use cases.

2.4   Further work in WP2

Feedback regarding usage of the tool is being collected in Task 2.3 to prepare an acceptance procedure for the UVAR Box Tool and its documentation. Data generation, collection and maintenance takes place in Task 2.4.
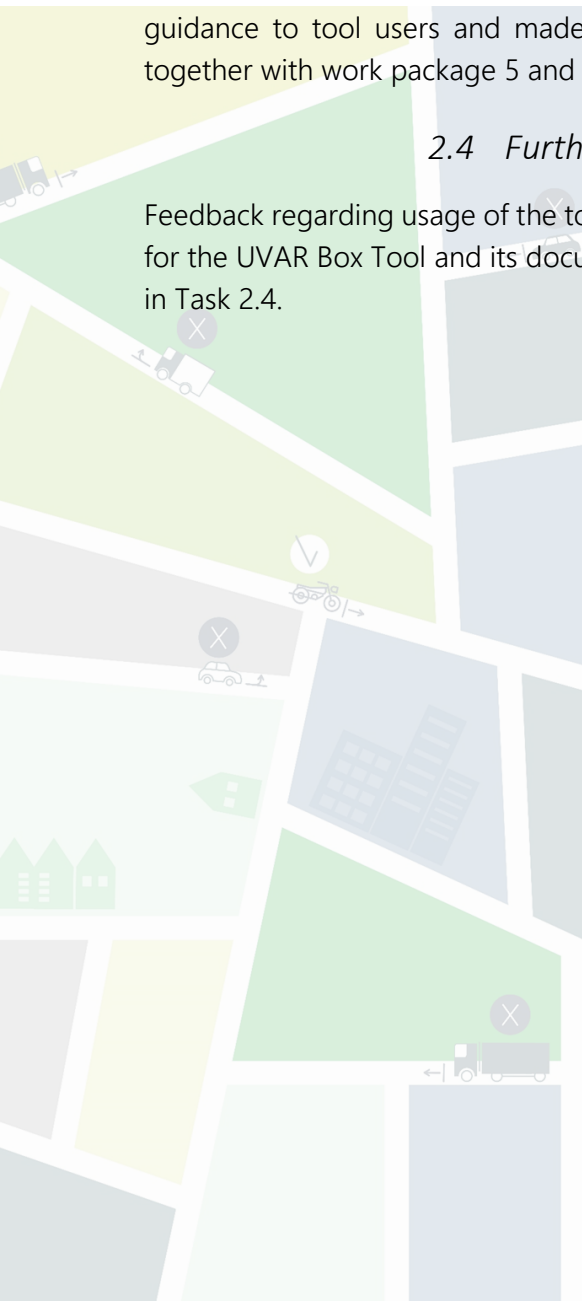
Glossary

Term	Definition
REST	Representational state transfer
UVAR	Urban Vehicle Access Regulation
UVAR Box Tool	Tool to enable the digitisation of UVARs

Interconnections with other work packages

Related themes described in other work packages

For details regarding the data model used as the basis for the UVAR Box Tool see deliverables D1.2 and D1.3. For details regarding the processes of defining UVARs in the different countries and the functional specification of the UVAR Box Tool see D2.1 and D2.2. For specification of UVAR related data-flows for data collection and data maintenance see D2.4. For technical and user documentation see D2.5 Technical documentation and user documentation of UVAR tool.

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