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CARE/CADaS BI Launch Pad 4.2 Reporting Tool Manual

Directorate-General for Mobility and Transport

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CARE / CADaS BI Launch Pad Reporting Tool Manual
Business Objects BI 4.2 SP3
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1. INTRODUCTION

1.1. Background

Since long, road accident data are collected in the European Union (EU) countries by the use of **their own national collection systems**. At European level, road accident data are also available since 1991 in disaggregate level in CARE, the Community database on road accidents resulting in death or injury. CARE comprises detailed data on individual accidents as collected by the Member States, using a structure which allows for maximum flexibility and potential with regard to analysing the information contained in the system.

The purpose of CARE system is to provide a powerful tool which would make it possible to identify and quantify road safety problems throughout the European roads, evaluate the efficiency of road safety measures, determine the relevance of Community actions and facilitate the exchange of experience in this field. Parts of the national data sets are integrated into the CARE database in their original national structure and definitions, however, as existing national accident data collection systems are not always compatible and comparable among the countries, the European Commission (EC) provides and applies a framework of transformation rules to the national data sets, allowing CARE to have compatible data.

Previous version of the CARE database (CARE v1.0 model) contained 55 common road accident variables. However, it is acknowledged that more variables and values are necessary to better describe and analyse the road accident phenomenon at EU level. Due to differences in the collected data variables and values, their definitions, the differences of the accident data collection forms structures and the relevant data formats among the existing national databases, both accident data quality and availability are affected. Consequently, lack of accident data uniformity among and within EU countries hinders the exploitation of CARE potential and limits data analyses and comparisons at EU level.

Under this perspective, the recommendation for a **Common Accident Data Set (CADaS)** has been developed consisting of a minimum set of standardised data elements, which will allow for comparable road accident data to be available in Europe. In this way, more variables and values with a common definition will be added to those contained in the CARE database, maximising thus the potential of CARE database and allowing for more detailed and reliable analyses at European level.

The CADaS model is based on the identification of the data required for accident analysis through the input of Experts participating in CARE and/or SafetyNet research project, and on the analysis of the currently available national accident data collection systems in Europe. The variables and values included in the previous model of the CARE database were used as a basis for creating CADaS, but others international data files formats were also considered (US - MMUCC, WHO).

Today CADaS is the only supported model for data from 2011.



1.2. Scope and purpose

CADaS consists of a minimum set of standardised data elements, which allow for comparable road accident data to be available in Europe. **CADaS can be implemented on a voluntary basis** in the national accident collection systems and be gradually adopted by the EU countries. Thus, progressively, all road accident data from the various countries will be available in a uniform format. In this way CARE database, the European data base with disaggregate data on road accidents, will gradually contain more and more compatible and comparable data, allowing for more reliable analyses and comparisons across the EU countries.

CADaS refers to **the set of data to be voluntarily transmitted by each country to the EC (European Commission)**, which should be derived from the national road accident data collection system. This means, that the EU countries will not be legally obliged to adopt CADaS and can continue using their national systems. However, they are encouraged to do so so that they can in the meantime enhance their own database. In addition, the EC recommends the use of the CADaS model for data provided after 2010. In case the countries do not wish to adopt CADaS, they should continue transmitting national road accident data to the EC in the current CARE format. Moreover, if Member States wish to adopt CADaS, some variables might need to be collected under a different structure, in order to meet local/regional/national needs or particularities. Countries may continue using the particular variables and values for collecting national data and use appropriate transformations when these data are transmitted to the EC in the CADaS format.

At Figure 1, the CARE & CADaS processes of the national road accident data files are presented. Between both approaches, the compatibility of the accident data among EU countries is ensured. The main difference of these two approaches is related to the **degree of involvement** of the country in the process. According to the CADaS process, transformation of the national accident data will be performed at the national level and the derived CADaS variables and values will be transmitted to the EC, where they will be included in a more automatic way into the CARE database. This process will allow for more common variables and values but also for higher quality, given that the national authorities better perceive any particularities related to national data collection. Therefore they can better identify the interrelation between the collected and the CADaS variables.

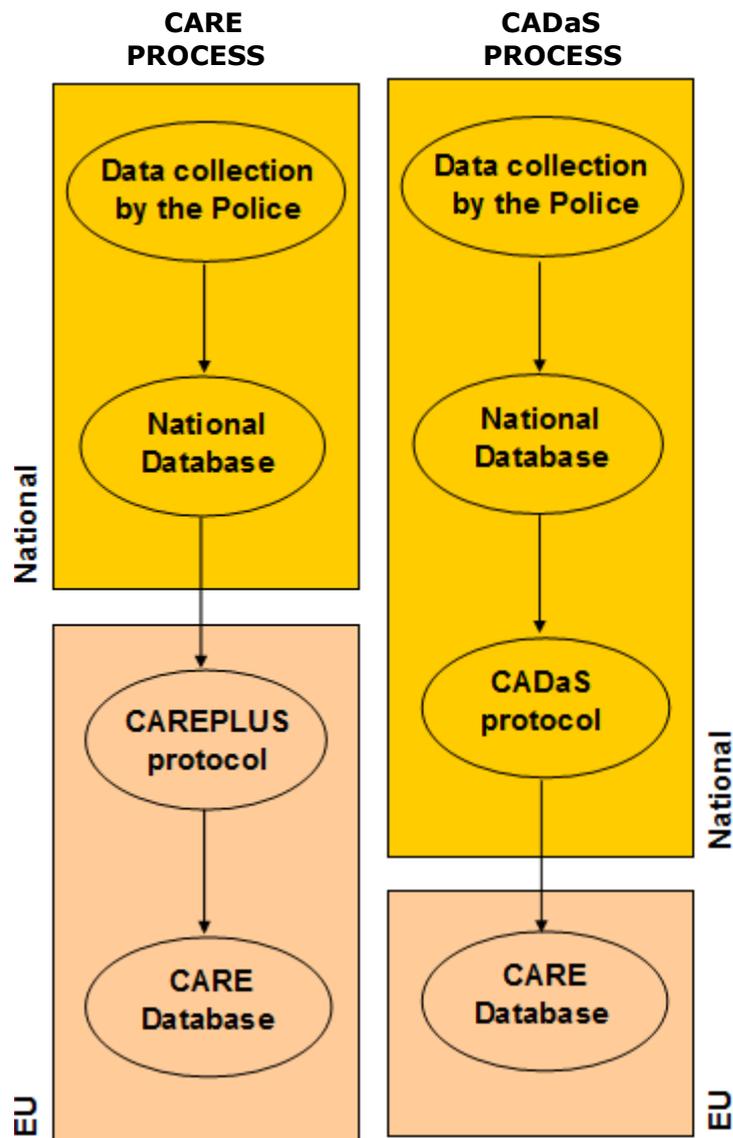


Figure 1: Accident data transformation processes

CADaS is structured in a simple way, without levels of hierarchy, constituting in fact the **record layout of the data set to be transferred to the EC**. The structure of the CADaS variables allows for various levels of detail to be selected for providing the requested data, by the use of alternative (aggregate) values. In this way, the data to be transferred can be more easily produced at national level. **However, the variables and values of CADaS may also be considered as recommendations for national police road accident data collection reports.** Moreover, CADaS variables and values can be further enhanced (derived variables to be added) inside the CARE database allowing for a wide range of analysis reports.



1.3. Selection criteria for CADaS data

The selection of the data variables and values incorporated in **CADaS** resulted from the balanced co-consideration of the following basic criteria:

- **Variables and values must be useful for road accident analysis**, especially at EU level.
- **The level of detail of the variables and values corresponds to all data useful for macroscopic data analysis** and not for detailed reconstruction of the scene of the accident, which is of local interest.
- **Each country should have the possibility to choose alternative level of detail** of the various variables and values.
- **Variables and values must be comprehensive and concise**. Each variable must include description and scope (importance to road safety) attribute values and their definitions and the data format.
- **Data which are impossible or very difficult to be collected are not retained in the CADaS**, independently of their value for road accident analysis; as such data might be of low quality.
- **The future perspective of using certain variables and values** was taken into account, even though those data are not currently collected by most of the countries due to current technical difficulties (i.e. latitude and longitude of the accident location, etc.).
- **Existing variables and values of CARE v1 are of first priority within CADaS**.
- **CADaS variables and values refer to casualty road accidents**, i.e. all road accidents involving at least one moving vehicle and one person injured or killed as a consequence of this accident. Not injured participants within an injury accident can optionally be recorded. Material damage-only accidents are not considered.

1.4. CADaS structure

The CADaS variables presented in this Manual are divided into **four basic categories**. The category in which each variable is included can be identified by a unique letter (code) at the beginning of the name of the respective variable. The categories and the relevant codes used to describe each category are the following:

- A**, for **Accident** related variables,
- R**, for **Road** related variables,
- U**, for **Traffic Unit (vehicle and pedestrian)** related variables,
- P**, for **Person** related variables.



In Figure 2, the interrelation among the four basic categories is presented, clearly indicating the links of the various road accident variables included in CADaS.

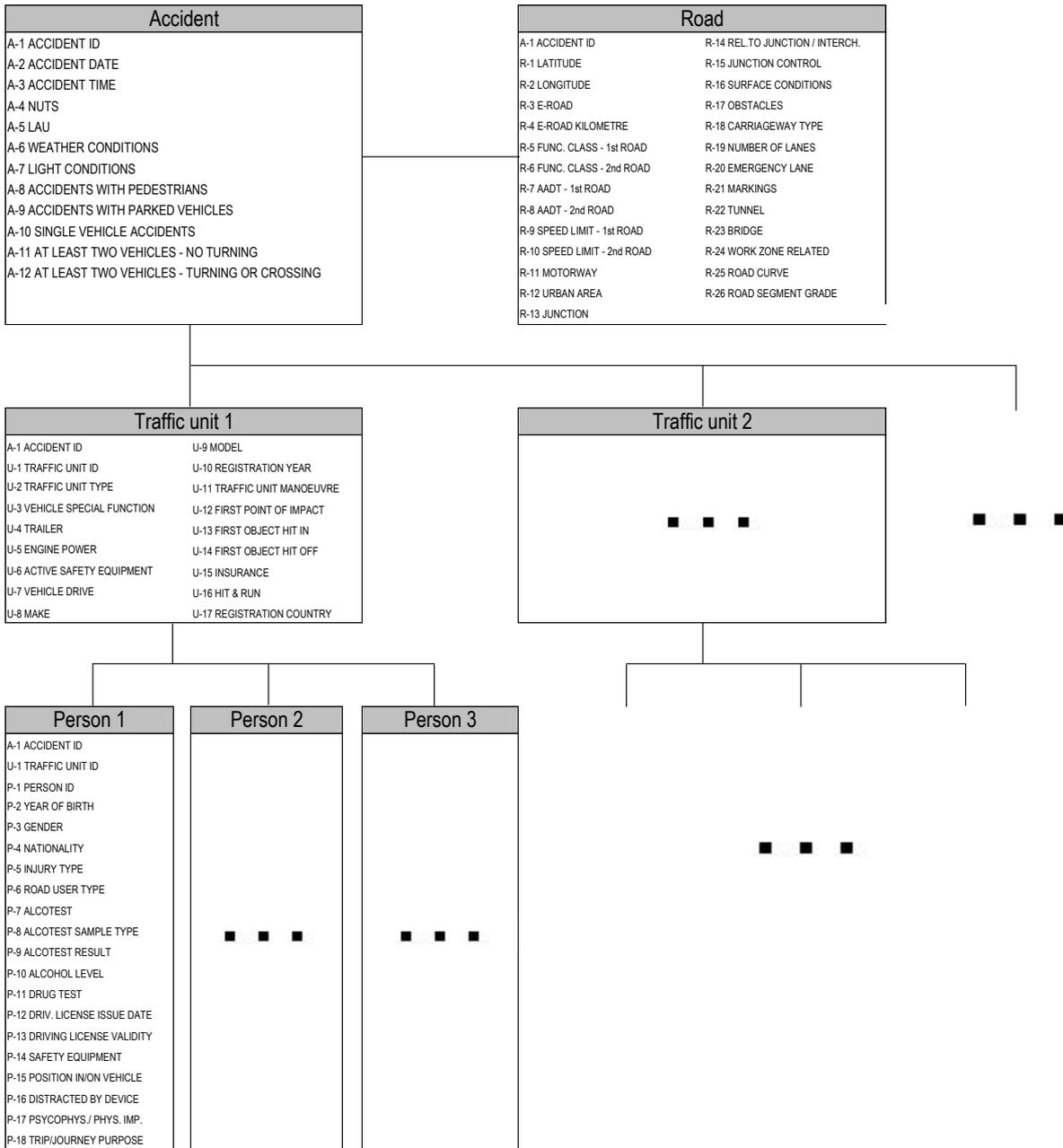


Figure 2: CADaS structure



Several variables include two distinct types of values, referring to different level of detail:

1. **Detailed values:** concern information at the highest level of detail.
2. **Alternative values:** concern information at a more aggregate level of detail, when more detailed values are not available.

Alternative values do not differ from detailed values apart from their level of detail. These values are complementary and can be used when more detailed data are not available (for example concerning the "Traffic Unit type" variable, if a country does not collect the values "car" and "taxi" separately, it can provide this information through the "car or taxi" alternative value). Both detailed and alternative values have the same number of digits (letters or numbers) and occupy the same columns on the record layout. For alternative values, the **(A)** coding identifier is used next to the category code (e.g. AA, RA, UA, PA).

Due to the fact that CADaS is designed to be adopted gradually and on a voluntary basis by the EU countries, over the coming years, the recommended variables were separated into two broad categories, according to their importance for road accident analysis: **variables of high importance (H) and variables of lower importance (L)**. Apart from their importance for road safety analysis, CADaS variables are separated according to the current reliability the collected data and the related collection feasibility.

It should be clear that **all EU countries may continue using their national systems** and collect accident data in any way they find most appropriate. However, the European Commission is recommending countries to plan, e.g. when upgrading their national systems, the necessary adjustments allowing to provide the CADaS data to the EC. These data can be directly collected, or derived from collected data, or obtained through linkage to other national data bases (driving licenses, social security, road network, vehicle registry, etc.). Countries can certainly opt for the level of detail of CADaS data to collect and transmit, according to the various proposed CADaS alternative values.

The structure of CADaS allows for **maximum flexibility**. The proposed record layout allows for the data to be provided in a simple way without levels of hierarchy, irrespectively how these data are collected in each national system. Flexibility is also ensured by the use of the alternative values, which allow for the provision of information at different levels of detail, according to the existing national data collection system.

The proposed **value coding** is indicative and refers to the format, in which the CADaS data should be transmitted to the EC by the countries that wish to fully or partially adopt them. With reference to the proposed measurement units of various values (kms/miles, etc.), the most commonly used measurement units by the EU countries are retained. However, necessary adjustments of these measurement units can be adopted in case some countries use different metric systems (i.e. miles per hour instead of kilometers per hour for speed measurement).

For each of the variables included in the **CADaS**, the following information is presented:

Variable Label: The label of the proposed variable, consisting from the category identifier (A, R, U or P), the numbering and the name of the variable. The importance of the variable for road safety analysis is also added: (H) for variables of high importance and (L) for variables of lower importance.

Variable definition and scope: A brief description of the variable is provided, followed by the importance and usefulness of the variable, explaining the rational lying behind its selection.



List of values: The attribute values to each variable are listed.

Value labels: Each value is identified by the code of the variable, followed by a number which corresponds to each value and its name. The (A) code is added next to the variable category code for the alternative value (i.e.: Unknown, Not Applicable, grouped values, etc.), when is the case.

Value definitions: The definition of each value of the variable is provided, indicating also any particularities of the value and any relevant assumptions regarding its collection.

Data Format: The way in which each variable has to be provided. Data formats concern:

- the possibility to attribute one or more values to a variable,
- the format of the value (code, number, text).

1.5. Summary of variables and values

The number of variables and values contained in CADaS (excepting precise values such as speed, date, time, NUTS/LAU codes, alcohol levels, etc.) are presented in Table 1:

Variable category	Code	Number of Variables			Number of Values		
		High (H) importance	Lower (L) importance	Total	Detailed values	Alternative values (A)	Total
Accident	A	8	5	13	79	14	93
Road	R	12	13	25	75	22	97
Traffic Unit	U	8	10	18	393	23	416
Person	P	13	8	21	317	26	343
Total		40	36	77	864	85	949

Table 1: CADaS variables and values in numbers



1.6. Acknowledgements

The recommendation for a Common Accident Data Set (CADaS) is **the result of collective work** of the partners of Task 1.4 of the EC co-funded SafetyNet Integrated Project under the coordination of the National Technical University of Athens. More specifically, these partners were:

- George Yannis, Petros Evgenikos, Antonis Chaziris, National Technical University of Athens - Greece
- Jeremy Broughton, Brian Lawton, Louise Walters, Transport Research Laboratory - United Kingdom
- Stefan Hoeglinger, Thomas Leitner, Andrea Angermann, Kuratorium fuer Verkehrssicherheit - Austria
- Niels Bos, Ellen Berends, Maarten Amelink, SWOV Institute for Road Safety Research - The Netherlands
- Stig Hemdorff, Danish Road Directorate - Denmark
- Peter Hollo, Institute for Transport Sciences Ltd - Hungary
- Jan Tecl, Transport Research Centre - Czech Republic
- Lucy Rackliff, Vehicle Safety Research Centre - United Kingdom
- Jaime Sanmartin, Jean Francois Pace, Research Institute on Traffic and Road Safety - Spain



SafetyNet Integrated Project was finalised in 2009.

The officials of the Road Safety Unit and of the CARE team of the European Commission, as well as the national representatives of the 28 EU Member States in the CARE Experts Group contributed also significantly to the development of the CADaS by providing important input at the various stages of its development.



2. CARE / CADaS BI Launch Pad (ver. BI4.2) REQUIREMENTS

2.1. Software requirements

To have access to the CARE Business Objects BI4.2 (named BI Launch Pad) Information System environment, here are the mandatory requirements:

§ Use a PC with a standard Internet Browser. BI4.2 officially supports the most recent and popular web browsers. If your browser is not supported, it may still work, but it cannot be guaranteed (See Annex 1 for details).

§ A Java virtual machine (JVM) should be installed on your machine. The versions supported by Business Object are: JRE 7, 8.

Browsers supported for Windows 8.1 and 10 are: Microsoft IE 11 (Edge is not supported), Mozilla Firefox ESR 38.x and Google Chrome.

Browsers supported for Mac OS X 10.9 is Safari 7 and for Mac OS X 10.10 is Safari 8.

§ An active registration at the EU Login service.

If never registered nor enabled by the CARE Team, please refer to <https://webgate.ec.europa.eu/cas/eim/external/register.cgi> for registration and contact the CARE team at MOVE-CADAS@ec.europa.eu to inform us about the email address entered and for being enabled.

§ Getting to the url address to access to the login page:

https://webgate.ec.europa.eu/MOVE_ENER_CARE/BOE/BI

§ A specific BI4 Java plug-in will be used by BI4 if *Applet* modality was chosen (see next paragraph 2.2). If it doesn't exist on your computer, the first time that you will edit a report, you will be asked by the tool to install it.

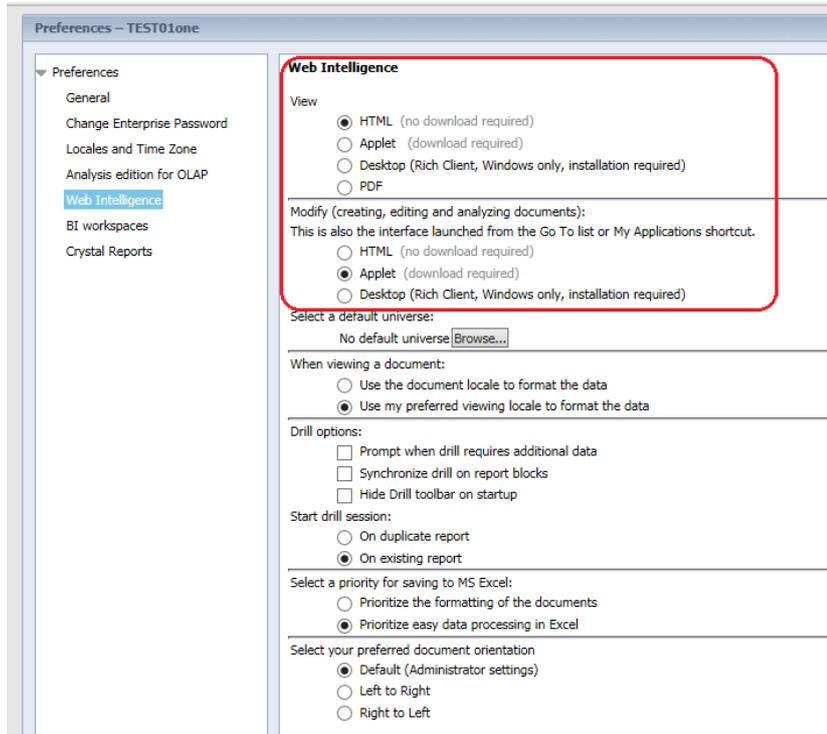
§ Please refer to Annex 1 for further compatibility considerations.

2.2. Select a default report creation/editing tool in the Preferences

1. Log on BI launch pad using EU Login.
2. On the BI launch pad toolbar, click **Preferences**.

The "Preferences" page appears.

3. Click the **Web Intelligence** section.
4. In the "View" and "Modify" sections, select the tool that you want to use when you view, create or edit Web Intelligence documents:



- If you want to use a graphical editor to build formulas, then choose **Applet**.

The Applet editing tool, using some Java functions, allows you to define the content of documents from multiple data sources and create and or modify the queries on which new or existing documents are based. You can also create subqueries, combined queries, and rank data.

Note: You need the first two optional requirements. You must use a browser that supports the Java Virtual Machine and install a Java applet to use the Interactive editing tool.

- If you want to work with queries in an HTML environment, then choose **HTML**.

The HTML editing tool allows you to define the content of documents from multiple data sources. You can use the Interactive editing tool to create new documents or modify the queries on which existing Web Intelligence documents are based.

Note: You don't need to install anything, only mandatory requirements are required.

Note: You need also all the optional requirements. This requires the installation of Web Intelligence Offline to your pc. You need administrator rights.

5. Click **OK** to save your choices.



2.3. Important Recommendations

- Please do a logout of your session when work is finished or when you leave the office.
- Please avoid writing your password somewhere.
- A username and password are personal. Please don't give it to someone else.



3. BI Launch pad BASIC SKILLS

3.1. Getting started with BI launch pad

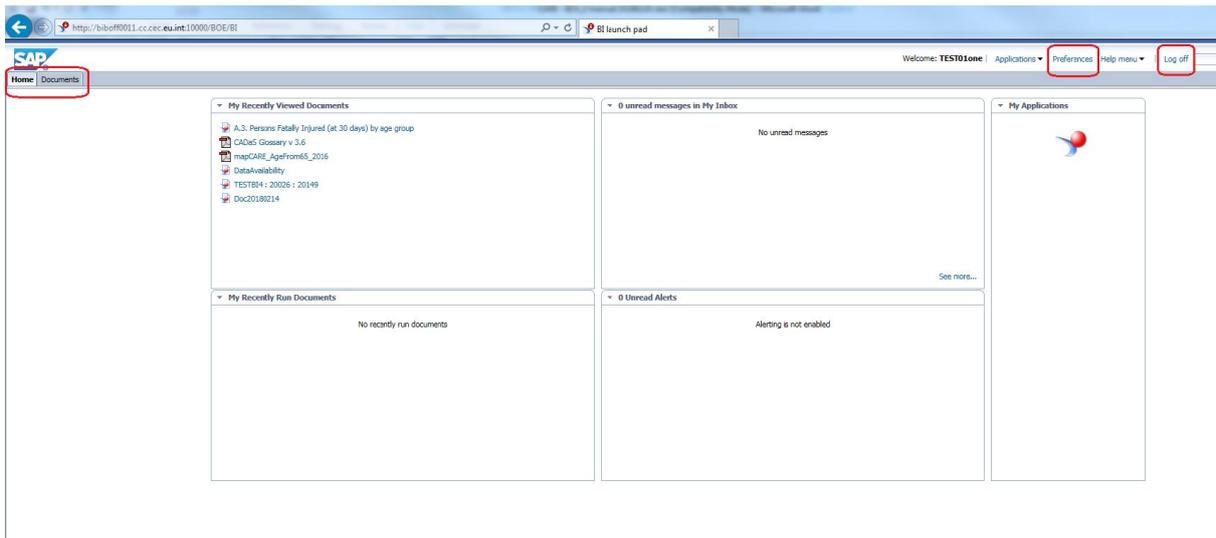
After successfully connecting your system to the internet, the CARE /CADaS reporting environment is accessible with your web browser under the following address:

https://webgate.ec.europa.eu/MOVE_ENER_CARE/BOE/BI

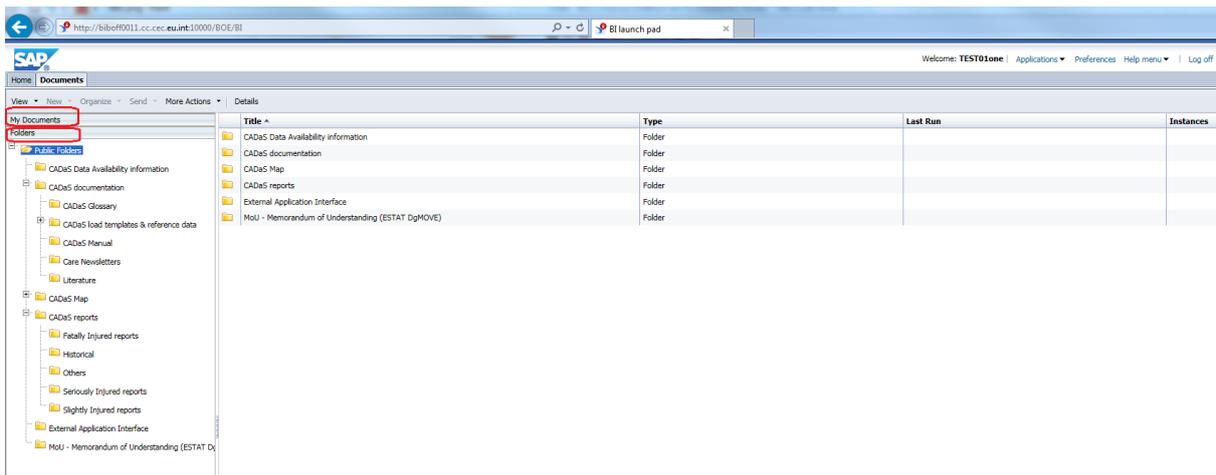
Enter your e-mail address and password into the EU login authentication service and press Enter. After you successfully log in to the system, the BI4 launch pad home page appears. If you are not able to log in successfully either you have never registered into EU login and/or you have not been enabled by the CARE team, please consult also chapter 2.1. to see how to request a user profile.

3.2. Find and open a report, categories & folders

When logged in to the Home page, click on "Documents" tab (see next screenshot) and you will be prompted to your own **Home** page (or tab) with an overview of the Recent activities, Messages and available applications.



If you click on the **Documents** tab you have a view to a tree-list of the available documents – My Documents (your own documents) and Folders (Public). The upper toolbar allows you to organize the environment and the documents



My Documents

This area can be organized in folders and sub-folders personally by the user. Use this area to save personal documents or shortcuts to the reports you run or view frequently. For knowing how to organize your favorites, please read page 17.

Inbox

You can send documents to the inbox of other users and the documents you receive from other user can be found in the inbox folder. It is also possible to schedule a document that BO will send to the inbox of one or more users. These documents will be stored in your inbox.

Folders

Every report has to be stored in a folder. Users are granted to view a folder or not. A report can belong to only one folder. So it's a logical and physical organization of the public documents. If a report belongs to multiple folders it's physically not the same



report. In this case, it is not guaranteed that the result of these two reports will be the same.



Search title

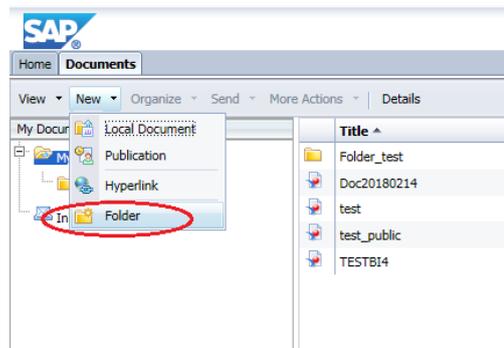
If you can't find the report in the folders, business objects can help you to search a report. To search on title select from the drop down list the "Search on Title" item and type the title or a part of the title in the text box next to the drop down list. Use the hand magnifying glasses to activate the search. A list of reports matching the search criteria will appear. Try out also the other items in the drop down list e.g. advanced search.

Organize your favorites

To organize your favorites you can create or delete folders and add or remove shortcuts to reports in the folder structure of the My favorites folder.

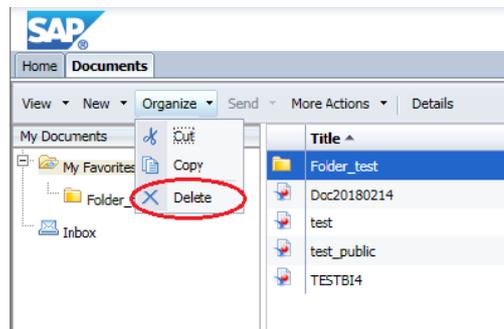
To create a new folder:

1. Select the "Documents" folder by a single click on the folder.
2. Click on the "New" menu item
3. Select "Folder"
4. Complete the pop-up with the new folder name.
5. Click OK



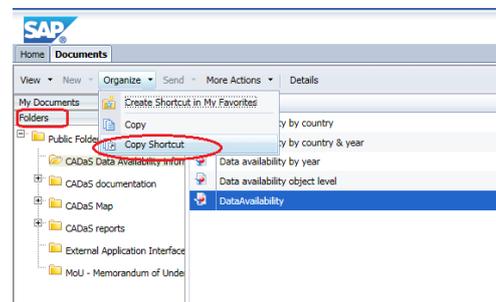
To delete an existing folder or shortcut:

1. Select the folder you want to delete in the "My Favorites" folder.
2. Click on the "Organize" menu item.
3. Select "Delete".
4. A pop-up will appear to ask if you are sure you want to delete the folder.
5. Click OK



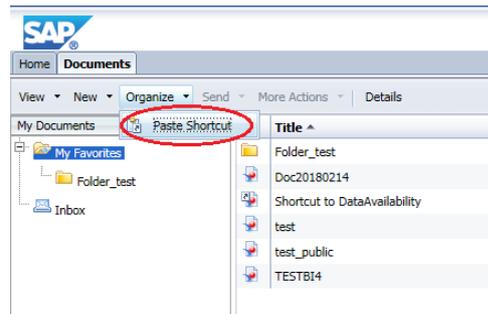
To copy or paste a shortcut to a folder:

1. Select the report from the "Public Folder" structure where you want a shortcut in the "Folders" tab (bottom left).
2. Click on the "Organize" menu item.
3. Select "Copy Shortcut"
4. Select the folder from the "My Favorites" folder where you want the shortcut.
5. Click on the "Organize" menu item

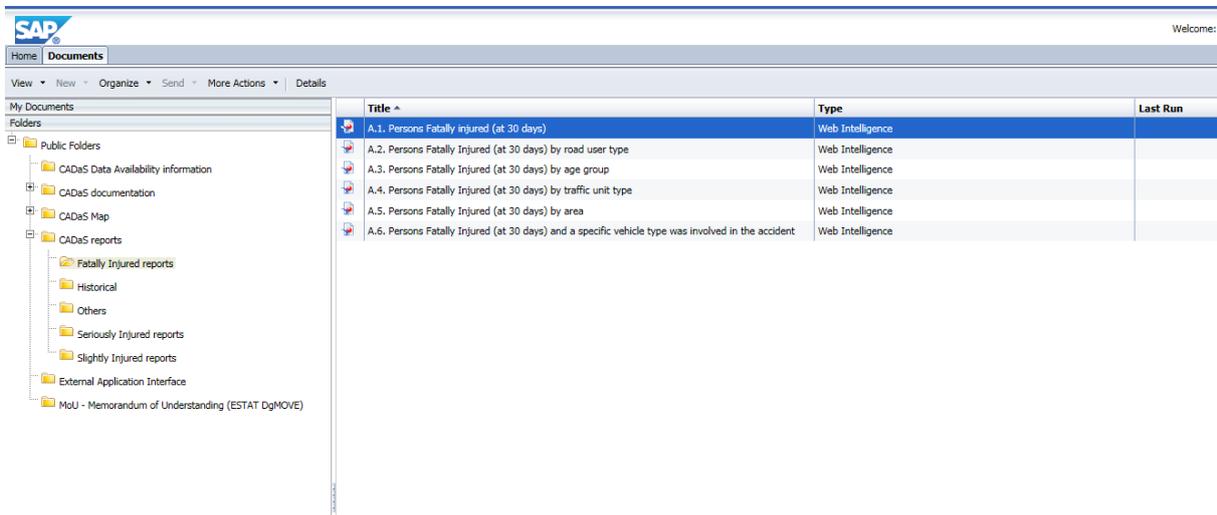




6. Select "Paste Shortcut"

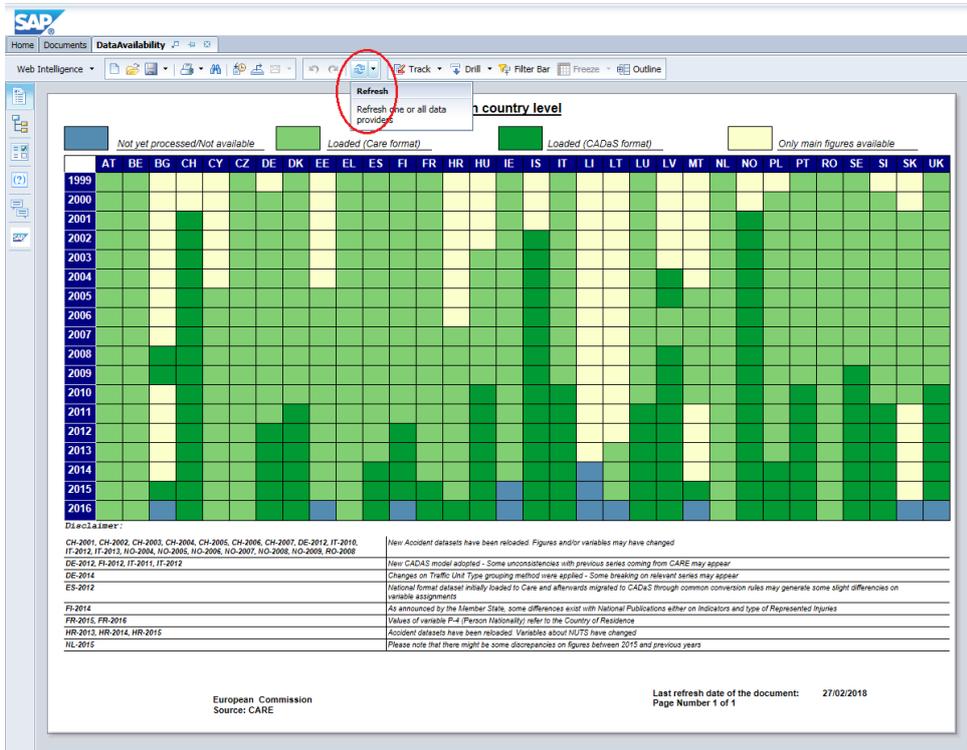


To open a report just double click on the report name and the report will open in your web browser. More than one report can be open in one session each of them corresponding to a tab. For reports that don't require user prompt values it will be refreshed automatically without user interaction. For reports with user prompt values you have to complete the prompts before you can run the report. For more information about this read the point 3.3. "Refresh a Report".



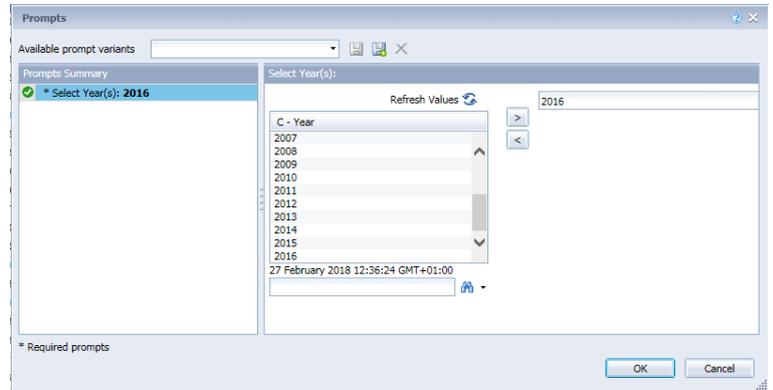


3.3. Refresh a Report



To refresh a report simply press the "Refresh" button. If the report has no user prompt values the report will be refreshed. If a popup appears with the user prompts, you first have to complete the user prompt values before you can refresh the report.

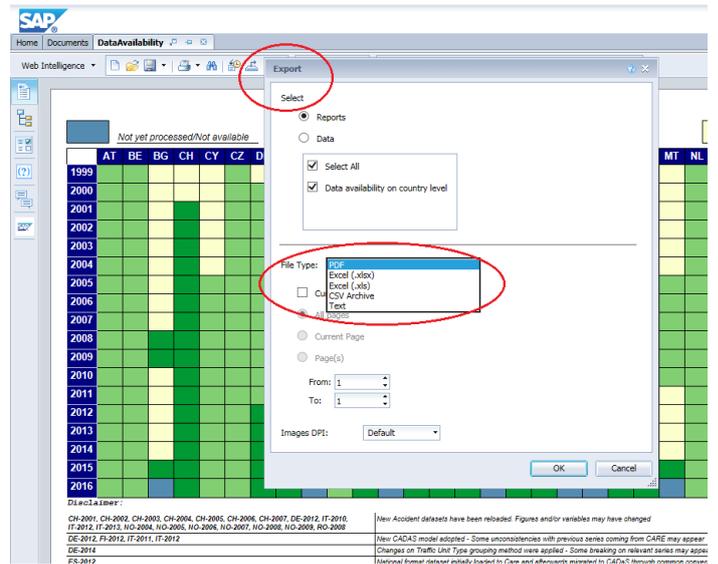
In the top of the popup you see the prompts you have to complete. Click on the line to select a prompt. You can select a value for the selected prompt from the list by selecting the value and double click or use the arrows to add or remove a value. Use the "Refresh Values" button if you think you don't see the latest values. If prompt is of type < free text >, you can enter the value in the text box. If not, it's gray and you have to use the arrows. Once you completed all the prompts you can continue to refresh the report by clicking on the "OK" button. More information on the popup is available in "More Information" part. The information appears in this box after you have selected a prompt.





3.4. Export a report locally to your pc

To export a report locally to your pc, click the relevant button "Export", choose what format, Report - "Select All" for All tabs or specify the Report tab name for a specific report - or Data, you want to export and the type of file (if Data only CSV). Then validate by clicking on button "OK". Now you can specify the location to save the document.

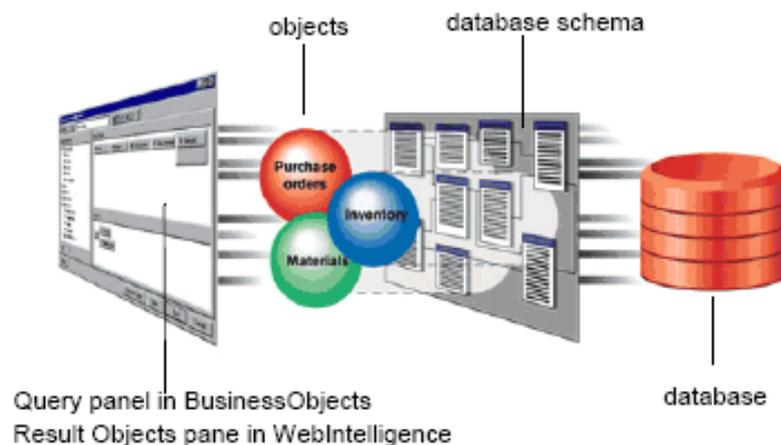




4. UNDERSTANDING THE CADaS UNIVERSE

4.1. What is a Universe?

Business Objects revolves around the concept of the **Universe**. A Universe is a cut-down version of a relational database. The Universe is a semantic layer that contains metadata (data about data) which allows translating the complexities of the database into business-friendly terms for end-users. Correct SQL generation, manipulation of data based on the metadata and on the additional business logic in the Universe is hidden behind a Universe. Each Universe is constructed with a set of Objects and Classes of Object.



There are three types of result objects:

▀ **Dimension objects** retrieve the data that will provide the basis for analysis in a report. Dimension objects typically retrieve character-type data (age, traffic unit type ...) or date information (month, day of the week ...).

📊 **Measure objects** retrieve numeric data, or data that is the result of calculations on data in the database. Measure objects are semantically dynamic: the values they return depend on the objects they are used with.

📌 **Detail objects** are typically associated with measures or dimensions, and provide descriptive information about a measure. Detail objects cannot be used in filters.

There is also one type of filter object:

🔍 **Predefined Filter objects** are used to restrict the data retrieved from the database. It is best to restrict as much as possible the data from the beginning. The data you want to retrieve has to be sent over the internet to your pc. If you do not use this data, it is wasted traffic of data and time.

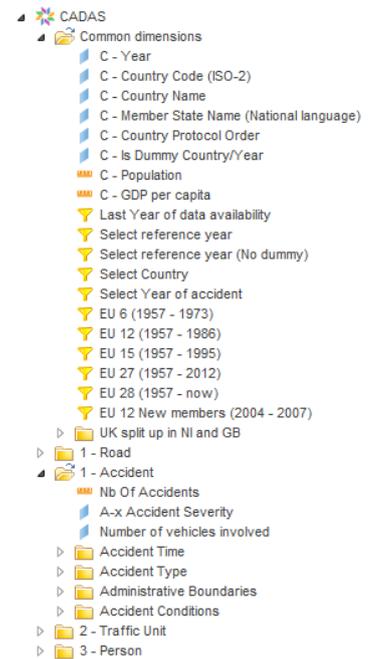


4.2. The CADaS Universe

The "CADAS" Universe is the most important Universe to analyse road accidents provided by EU/EFTA Member States – either in CADaS and national format – since year 1999. The Universe has a common folder and four other folders. Normally you select always some objects from the common folder (e.g. year, country) and combine this with some objects from the other folders.

As you can see, the four folders have the same name as the data files that are sent from the national countries to the European commission. To find an object, it can help to think if this variable is part of the ACCIDENT, ROAD, TRAFFIC UNIT or PERSON. The names of the objects are also the same names as used in the data files. You will find also a good description for the object and the classes in the Universe. If you don't find the object, you can also consult the CADaS glossary document available on the CARE / CADaS Business Objects Infoview Portal at under the folders Public Folders > CADaS documentation > CADaS Glossary.

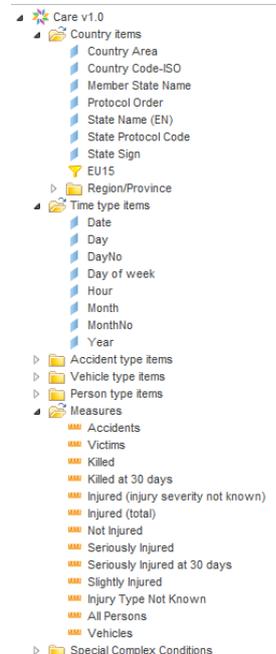
Some objects in this Universe are prefixed with an X. This means that these variables are calculated by the European Commission and not sent by the country. In the description of the object, you will find always more detailed information about the calculation. All other variables are the original values sent by the country without any modification or translation.



4.3. The CARE Universe

The "Care v1.0" Universe was the first Universe designed by DG MOVE (see here chapter 1.1 and 1.2) to analyse Road Safety before the common CADaS protocol was introduced and contains road accidents provided in national formats for years from 1991 to 2010.

The Universe has, among others, typical Time, Geographical, specific dimensions and indicators as common objects created with translations, interpretations and transformations executed by DG MOVE together with Member States.



Please be aware that CARE Universe does not include datasets provided in CADaS format.

On the other hand, **CADAS Universe includes also datasets provided through national formats**, loaded into CARE and afterwards converted into CADaS.



4.4. The CADaS Data Availability Universe

The "DATA_AVAILABILITY_CADAS" Universe is used to give an overview for every variable; how many times, in percentage, the values for this variable are used. You can retrieve this information for every variable of CADaS by country and by year or the combination of the two. To say it in one word, it's the metadata of CADaS.





5. BO REPORT CREATION BASIC SKILLS

5.1. Getting started with Web Intelligence

Create a new document

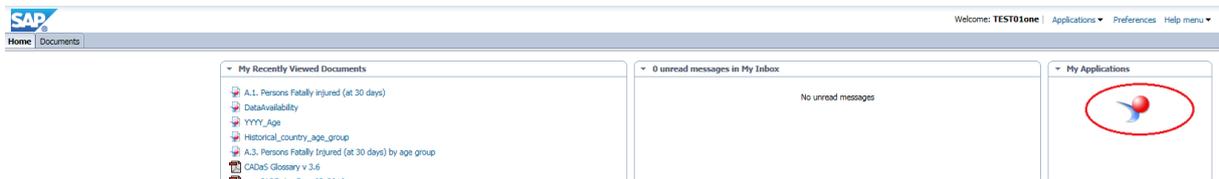
Web Intelligence is the application available in BI launch pad to edit, create and modify your own reports.

The best tool to use, only because you don't have to install software on your pc and you have the most functionality, is the advanced version. Normally this is the default setting, so you don't have to change something. In case you have doubts read the point 2.2. "Select a Default report creation/editing tool".

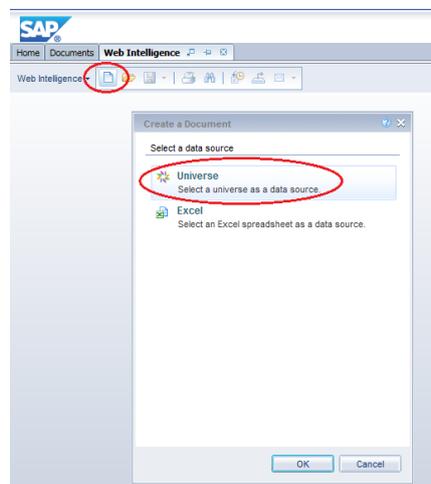
To create a new document click either from the "Applications" menu the value "Web Intelligence"



or from the Home page the Web Intelligence logo



A new Web Intelligence environment now opens in a new tab and allows you to create a report based on a Universe (see § 4.2) to select a data source.





If you choose **Universe** and you don't see the Universes listed at paragraph 4.2 you might not have the right to see them. In that case you can send an email to the functional mailbox MOVE-CADAS@ec.europa.eu and ask to have access to these Universes.

After choosing a Universe the web intelligence application will open a dedicated design environment.

Edit an existing report

Open the document simply by double clicking on the report title in the document list screen. You are now in "Reading" mode and you should see the screen below now. If you don't see this screen, read point 2.2. "Find and open a report, categories & folders" in the section BO launch pad basic skills.



Edit document

In order to edit the report, click on the "Design" button. You are now in "Design" mode and the report setting and data will be now available through Web intelligence.

Save a document

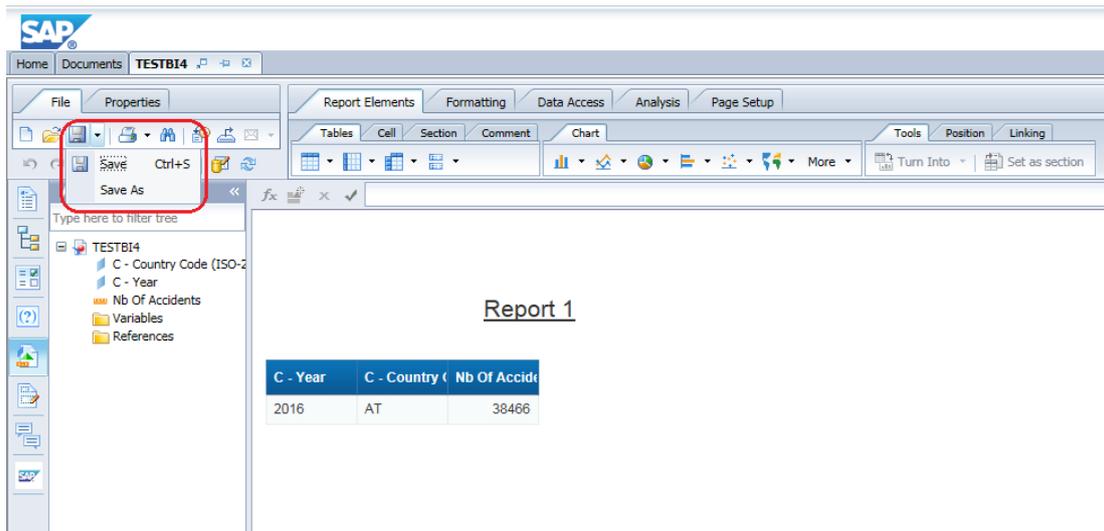
After you have created a new document or you made some changes to an existing one, you may want to save the document.

Please remind that Web Intelligence is an online tool and has an expiration timeout. This means that if you don't use it for a certain time, you will be disconnected from the application. If your report was not saved, web Intelligence will automatically save it for you. You can find the report in your "My Favourites" folder.

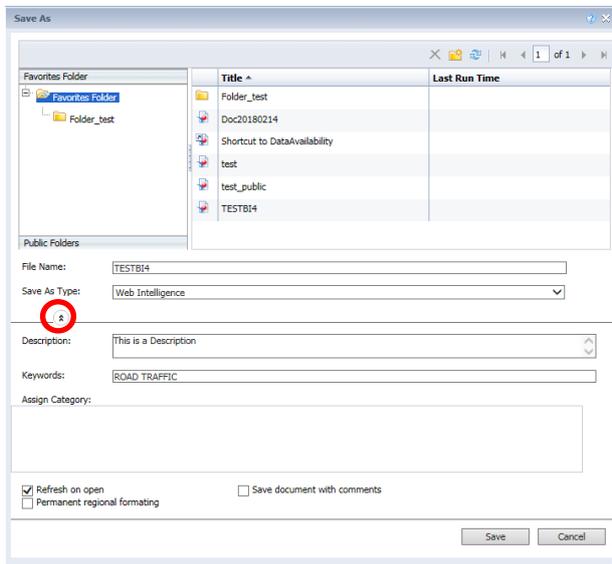
To save the document, just click on the "save" button.

For existing documents, if you simply click the button, the document will be saved under the same filename and folder. For new documents or if you want to save the existing document to another location, click on the arrow next to the "Save" button  and choose "Save as" from the list. The save document popup appears. Choose a folder or category to save your document, give it a name and click the "OK" button to save the document.

You can copy any object in your report to other applications like Microsoft Word by selecting the object and copy (CONTROL + C) - paste (CONTROL + P) the object to the application you want. Right click and choose copy or paste works as well.



Save Document



If you want to add a description to your report, simply click the "Advanced" button

in the save pop-up (→) and some new text boxes will appear. You can enter a description for the report and define some keyword to find the report when you use the search functionality in Infoview.

The option "Refresh on open", will refresh the report automatically each time you open the report.

The "Permanent regional formatting" check box overrides the user's default viewing options and always displays the document's original regional settings for language and time stamping.

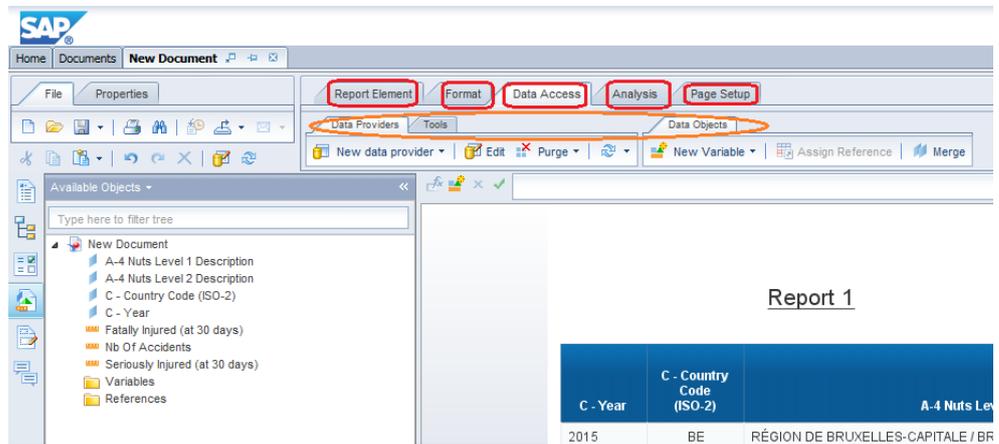
The advanced options are optional to save a document.



Report Element/Format/Data Access/Analysis/Page Setup

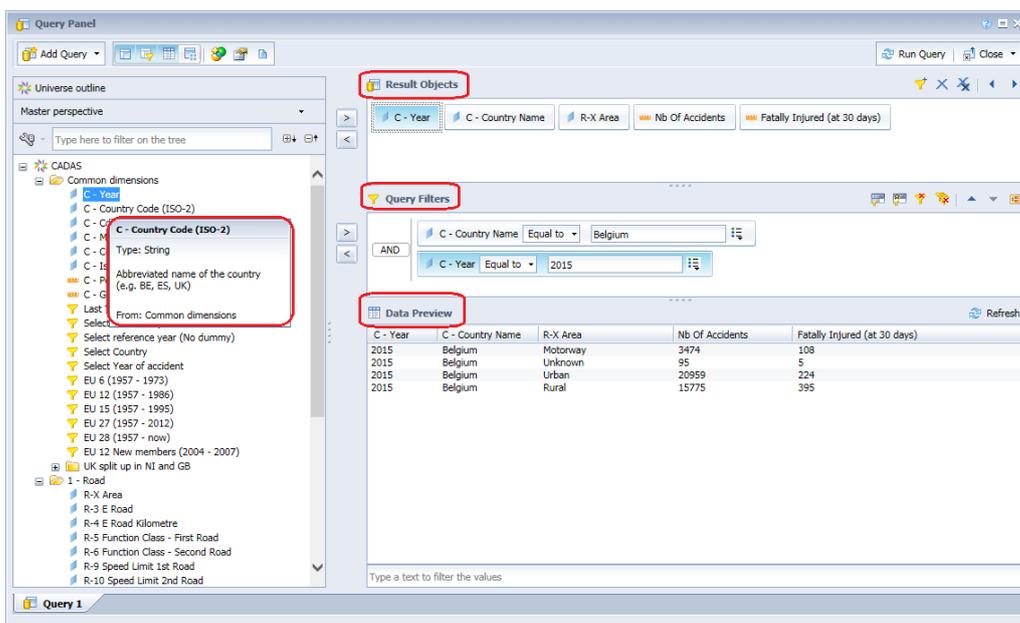
Web Intelligence Design environment is composed of five types of settings each of them clearly identified with a specific tab with relevant sub-tabs in order to switch from one stage to another – Query on (CADaS or CARE) database, choice of report, Format, etc.

Prior to get the above view, however, either the report exists or it has to be created for the first time.



If we are in a situation where the report still not exists, after selecting the Universe as defined at the beginning of this chapter, we define – using the Query panel – the *Data Access* (see above) settings or, in other words, we ask what variables / indicators we want to analyse and how do we want to restrict the database output.

To select objects, you can drag and drop the objects from the Universe displayed in the left side of the panel to the result objects panel on the right side or you can double click the object in the tree. To see the description of an object, move your mouse over the objects name and wait some seconds. The description will appear automatically on your screen. If you want to restrict the data, you have to put the object in the query filter panel. For predefined filters you can simply double click the object.





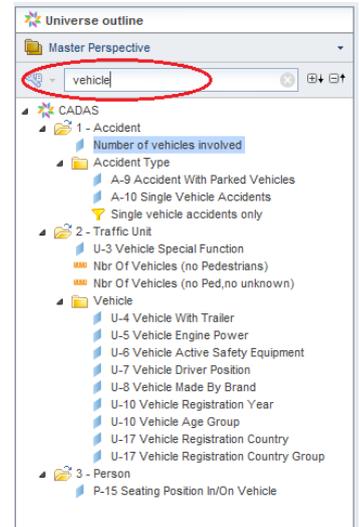
If you want to have a preview of the data retrieved, to understand eventually if, after defining some results and filters, an output is returned from the query, just click on the button "Refresh" of the **Data Preview** panel.

To see the results of the selected objects directly in your report, click instead on the "Run Query" button.

Depending on what objects and how many objects you have selected, it will take some time to retrieve the data. After the data is retrieved successfully, Web Intelligence automatically closes the Query panel.

If you can't find an object, you can use the search text box to find the object in the Universe. Type the name of the object in the box

and click the  button. If you click on the arrow, you can choose to match cases or not. Use "*" as wildcard (e.g. *age), press <enter> to find the next match.



Edit Query / Edit Report / Search

5.2. Display Data

Report Element - Tables

The simplest style for displaying data is *tables*. Web Intelligence provides four different types of tables: *horizontal tables*, *vertical tables*, *forms* and *cross tabs*.

The vertical presentation style is the default style and it is automatically created to display all objects defined in the Result Objects of Query panel when a report is created for the first time.

By default the header cells display the names of the dimensions, details and measures included in the table. The body cells display the corresponding values.

C - Country Name	Nb Of Accidents	Fatally Injured (at 30 days)
Austria	155250	1895
Belgium	155473	2952
France	232040	13764
Germany	1198836	13775
Italy	721458	13963
Spain	361960	6959

Vertical table



A horizontal table or financial table is similar to a vertical table, except that the data runs horizontal rather than vertically. By default, the row header cells display the names of the dimensions, details and measures included in the table. The body cells display the corresponding values.

C - Country Name	Austria	Belgium	France	Germany	Italy	Spain
Nb Of Accidents	155250	155473	232040	1198836	721458	361960
Fatally Injured (at 30 days)	1895	2952	13764	13775	13963	6959

Horizontal table

A crosstab looks similar to a spreadsheet and displays data in a matrix with rows and columns and headings describing the content of each cell. Cross tabs are most commonly used to show the cross-section of three axes of information.

Cross tabs display values for dimensions across the top axis and on the left axis. The body displays the value of a measure that corresponds to the cross-section of the dimensions.

	2012	2013	2014	2015
Austria	40831	38502	37957	37960
Belgium	38057	35632	41481	40303
France	60437	56812	58191	56600
Germany	299637	291105	302435	305659
Italy	188228	181660	177031	174539
Spain	83115	89519	91570	97756

Cross tab

Forms are useful in a report if you want to display for example detailed information per country.

C - Country Name	Austria
Fatally Injured (at 30 days)	1895
Nb Of Accidents	155250
C - Country Name	Belgium
Fatally Injured (at 30 days)	2952
Nb Of Accidents	155473
C - Country Name	France
Fatally Injured (at 30 days)	13764
Nb Of Accidents	232040
C - Country Name	Germany
Fatally Injured (at 30 days)	13775
Nb Of Accidents	1198836

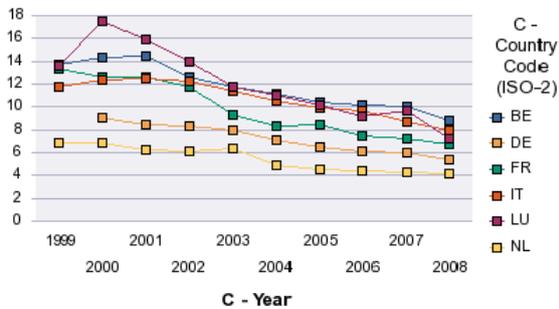
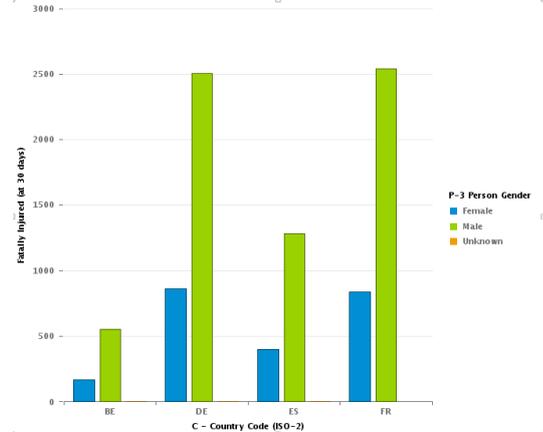
Forms



Report Element – Charts

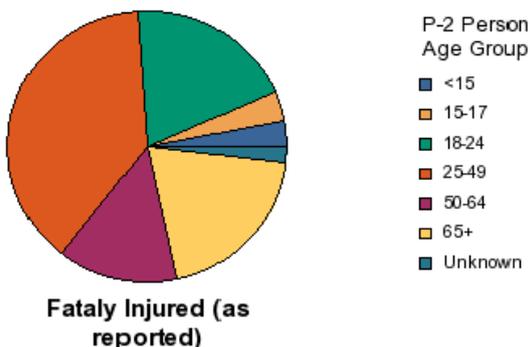
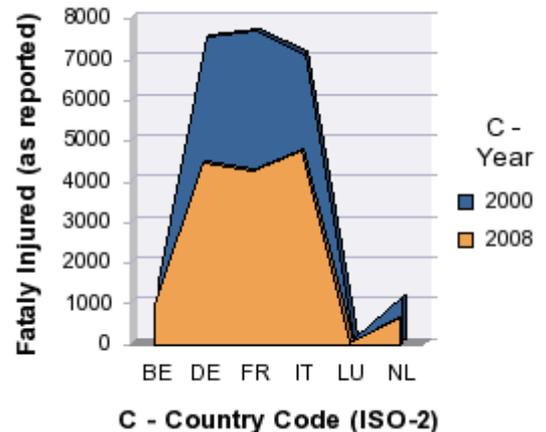
Web Intelligence offers standard chart formats to graphically display your business information. You can select one of five basic chart types: bar, line, area, pie and radar.

A **bar chart** displays data in a bar form, either vertically or horizontally. Bar charts are useful if you want to compare similar groups of data. There are five types of bar charts: grouped, bar and line, stacked, percent and 3D.



Line charts are good for showing trends in data at equal intervals. Line charts connect specific data values with lines, either horizontally or vertically. Line charts are useful if you want to show trends or changes in data over time. There are five types of line charts: Mixed, stacked, percent, 3D line and 3D surface.

Area charts are line charts in which the area between the lines and axis are filled in. Area charts are useful if you want to emphasize the size of the total data in a report, as opposed to the changes in the data. There are eight types of area charts: vertical absolute, horizontal absolute, vertical stacked, horizontal stacked, vertical percent, horizontal percent, 3D area and 3D surface. You may not want to use an area chart if you have a sharp contrast between specific data points. In case like that, it is recommended to use a line chart instead.

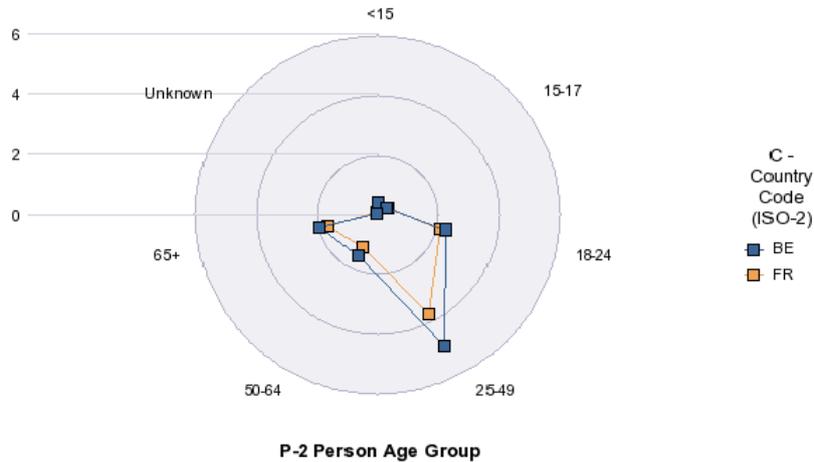


Pie charts display data as segments of a whole. Pie charts are useful if you want to show how each part of your report data contributes to the total. You can only include one measure object in a pie chart. If you have several measures in your report, you should choose another chart type. There are four types of pie charts: pie, 3D pie, doughnut and 3D doughnut.



Radar charts

In radar charts, the X- and Y-axis connect at the chart's centre. Radar charts are useful if you want to look at several different factors related to one item. There are four types of radar charts: radar line, stacked area radar, polar and scatter.

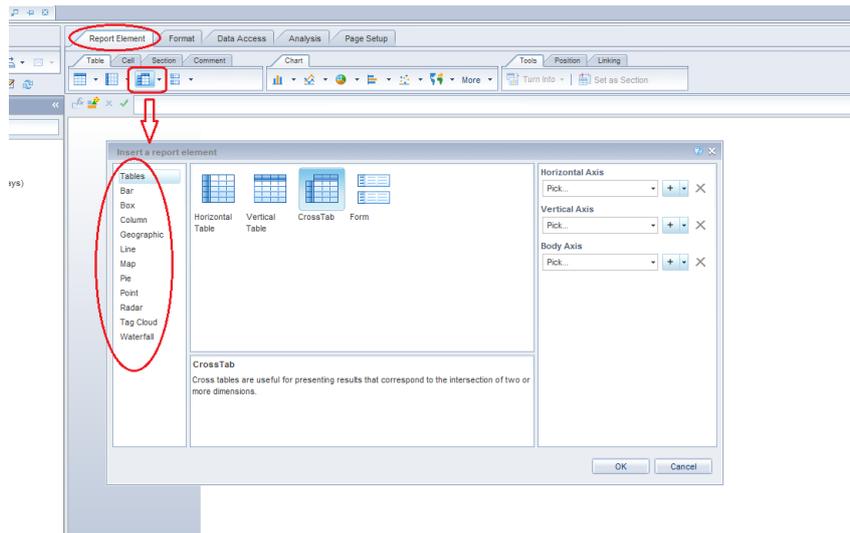


Report Element - Creating a table or chart

There are three different ways to create a chart or a table:

1. You can create a blank chart or table by dragging a chart or table type from the templates of Report Element tab, then dragging objects from the data tab to fill the new chart or table with data values. Vertical tables are default, in this case just drag and drop the objects from the data tab to the report area.

2. You can select an existing table, chart or cross tab and convert it to another style using the right-click menu.
3. You can also click on the arrow near of the template and open a popup containing all reports and charts available and make your choice



Just drag and drop the data objects into the report area. To select multiple objects, hold the <Control> key when you select the different objects. By default, the vertical table style will be shown. You can switch the order of the columns or rows by dragging and dropping the objects to the desired place.

Switch between different table or graph styles (right click menu / Turn into tab)

Select the table by clicking somewhere on the border of the table. Click the right button of your mouse and select the menu item "Turn to" from the list. Now the pop-up like on the left will appear on your screen. Select the table style you want and click on "OK".

Use the tabs in top of the pop-up to navigate between the different table styles or different graph styles: bar, line, area, pie and radar graphs.

The same can be obtained by selecting the whole table and chose a value from the sub-tab *Tools / Turn into*



If the chart or table doesn't display what you want, use the "Design" button and choose value "Structure only" to see the report in structure mode (without data) to change the objects to display the charts or the table correctly. Place holders contain more information about what object you should drag and drop to this place.





If the report is more than one page, use the button "Quick Display" of subtab **Page Setup / Display** to switch to quick view. Click "Page Mode" button to switch again to page display. Quick view makes it possible to see charts and tables on page two.

Fatalities as reported by age group in EU countries

Belgique/België

Total

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<15	69	90	63	67	77	53	54	87	65	52	63	36	32	26	37	32	30	35
15 - 17	73	68	55	53	55	54	50	49	39	55	46	47	39	32	31	21	27	28
18 - 24	421	392	363	385	288	261	252	297	287	328	281	262	241	240	196	195	215	177
25 - 49	724	637	655	676	600	550	578	610	580	608	632	568	484	509	473	482	464	411
50 - 64	226	196	237	211	178	162	183	185	189	176	192	171	166	150	160	141	159	139
65+	347	277	277	290	237	267	237	260	233	238	264	210	240	201	186	193	170	149
Unknown	13	11	10	10	14	9	10	12	4	13	8	12	11	4	6	5	6	5
Sum:	1873	1671	1660	1692	1449	1356	1364	1500	1397	1470	1486	1306	1213	1162	1089	1069	1071	944

Motorway

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<15	6	5	7	6	9	10	5	6	9	8	7	5	7	1	5	6	2	2
15 - 17	2	5	2	2	3	7	2	1	4	4	6	2	2	3	4	2	0	4

After you think the objects are placed like you want, click again on the value "With Data" button and the chart or the table will be shown like you want.

To customize the chart, the table or any object composing it, you can use the "Format table" or "format cell" function available by right-clicking the selected object (see also paragraph 5.4).

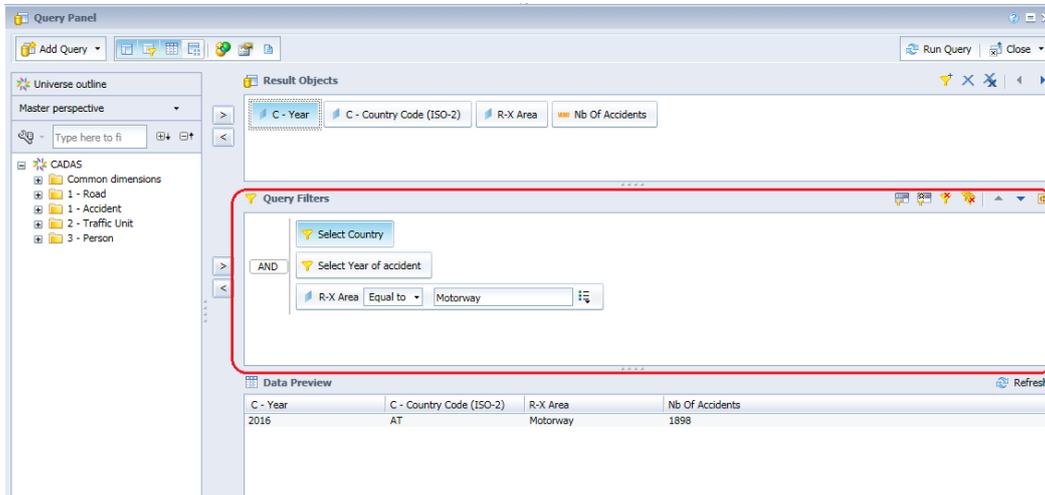
5.3. Restrict Data

There are three different possibilities to restrict the data. The best is to use as much as possible the query filter. It is a waste of time and data traffic to retrieve data you do not use. Therefore, set first of all the query filters. Afterwards you can use the table or report filter to restrict the data on a single sheet or report if you want to use the other data in another sheet or table.



Data Access - Set query filters

Go to the "Data Access > Edit > Query Panel" by clicking the button "Edit Query". You can drag and drop objects to the "Query Filters" pane.



For non-predefined filters, you have to complete the filter before it works. Click on the arrow next to the comparison expression **Not Equal to** and select the comparison expression you want. The only thing you have to do now is to select or type the

comparison value(s). For this, just click on the icon **Unknown** next to the value box. Now you see a list of all possible options:

- Constant: you can type whatever you want.
- Value(s) from list: you can select your value(s) from a list.
- Prompt: when you refresh the report a user prompt will appear to enter the value(s).
- Objects: you choose an object from the Universe to compare.

By default "Constant" is chosen and you can enter whatever you want in the box. Just enter the comparison value(s) in the text box.

When you choose values, a popup appears. Double click on the value or use the arrows to select the values. If you don't find the value in the list try to refresh the list by using the "Refresh values" button **Refresh values**.

When you choose "Prompt", type the prompt question in the text box, this text will be shown to the user when he refreshes the report.

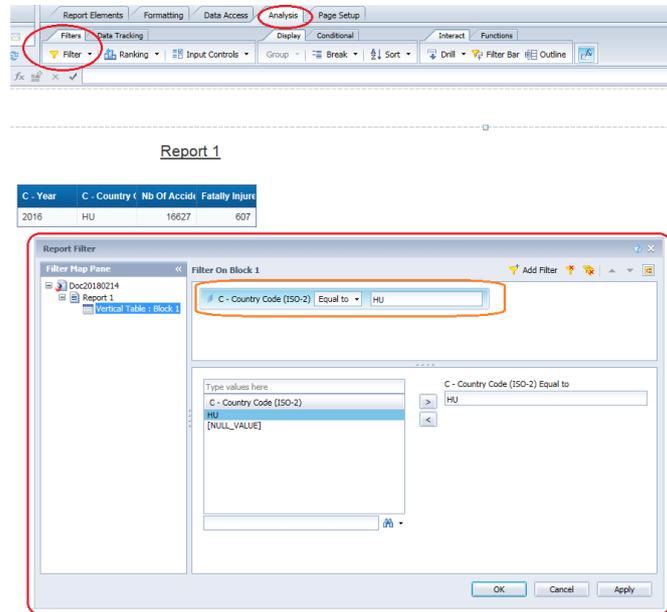
It's possible to change the "AND" operator between the different filter conditions or to group also the objects together. To change the operator (between AND / OR), double click on it. To group different filters drag and drop the object on the object you want to group. To change the operator of this new group, double click on the operator.





Analysis - Set report filters

It is also possible to restrict data at table or chart level. If you want to see for example only the last year in a separate table but in another table an overview of all years together, you can use a table filter. Sometimes it may be useful to set the filter on the report level; in this case the filter is valid for the complete tab in the report.

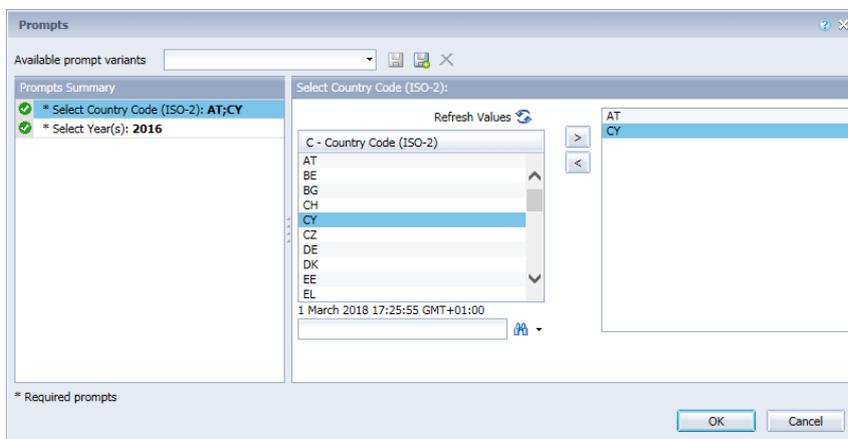


Simply click the button "Filter" from the *Analysis* tab. The filter pane will appear above your report creation pane.

Now you can select the object from the report creation panel. Select a table or a chart or an empty space in the report to choose between a table filter, chart filter or report filter. You will see that the title of the filter pane will change depending on the object or location you click in the report creation panel. Select the object you want to filter.

You can drag and drop objects to the filter pane. It works similarly to the filter pane in the "Edit Query" panel.

When you drag and drop a predefined filter to the pane you don't have to do anything. If you drag and drop another object from the data tab to the filter pane, a pop up will appear.



1. Select the operator you want

2. Choose operand type: "Constant" or "Value(s) from the list".

"Constant": you have to type the value yourself.
 "Values(s) from list": double click the value or use the arrows to select the values(s) from the list.

3. Click "OK"



Note: In order to not get unexpected results, it is important to understand well the CADaS model approach and especially the cardinalities between accident stakeholders (i.e. One Accident happens in one Road where one or more Traffic Unit are involved each of them has one or more Person involved. Pedestrians are among Traffic Units and Persons). Please refer to Annex 4 for explanations on specific Predefined Filters.

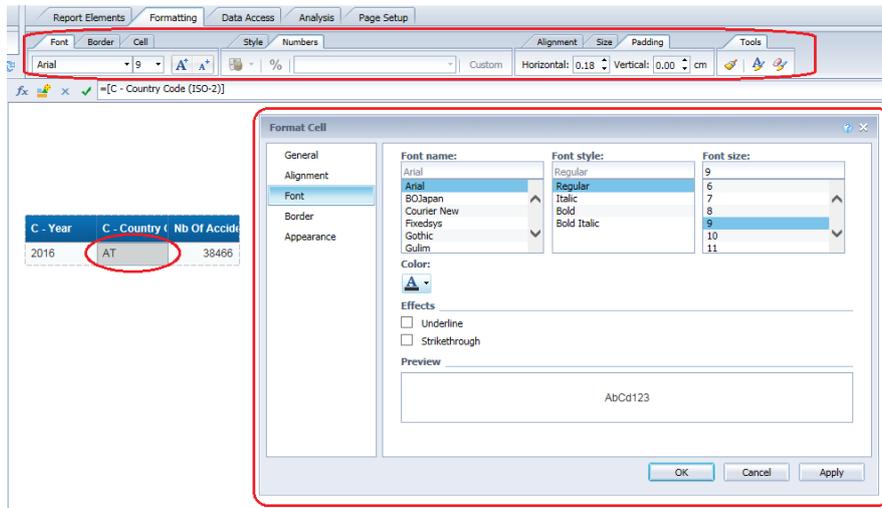
5.4. Format document

When you are in edit mode, tabs "Formatting" and "Page Setup" with all their specific sub-tabs allow you to format all the elements in a document. Try the different properties to see the effect of it. Hereunder we will highlight only the most important properties to format the text of a field in a table, cross tab or cell. But remember that the properties are available for every element in your report.

To change settings of cells such as numbers, texts, style, etc. it is possible to use the "Formatting" tab or the relevant right click functions after selecting the object while "Page Setup" tab will let you customize the report at page level.

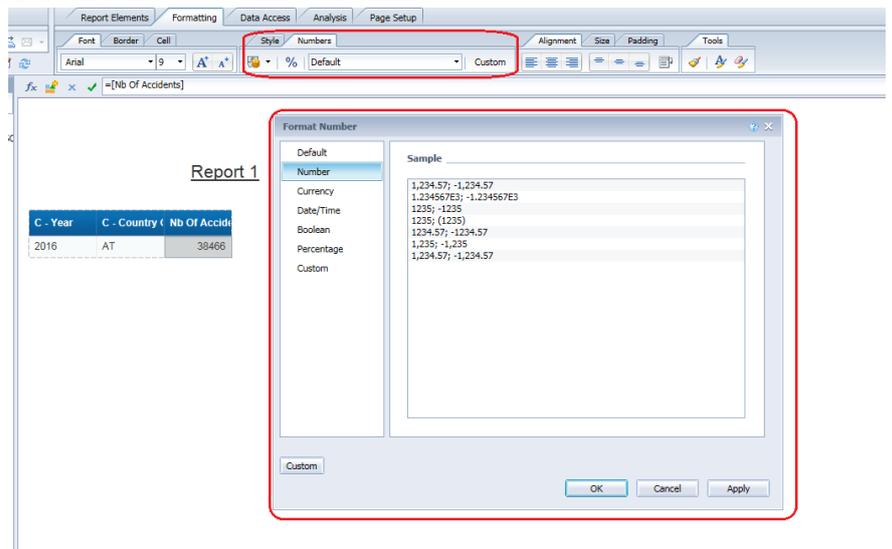
Format text - Formatting

Click on a cell and all the content that highlights will be affected if you change the properties in the properties tab. There is also a toolbar available to change the format of the text.



Format - Formatting numbers and dates

You can access the menu to format the number and dates in your report by a right click on the cell you want to change. You have to choose "Format Number" from the menu list. The change will have effect on all the highlighted content. The following pop up will appear on your screen.

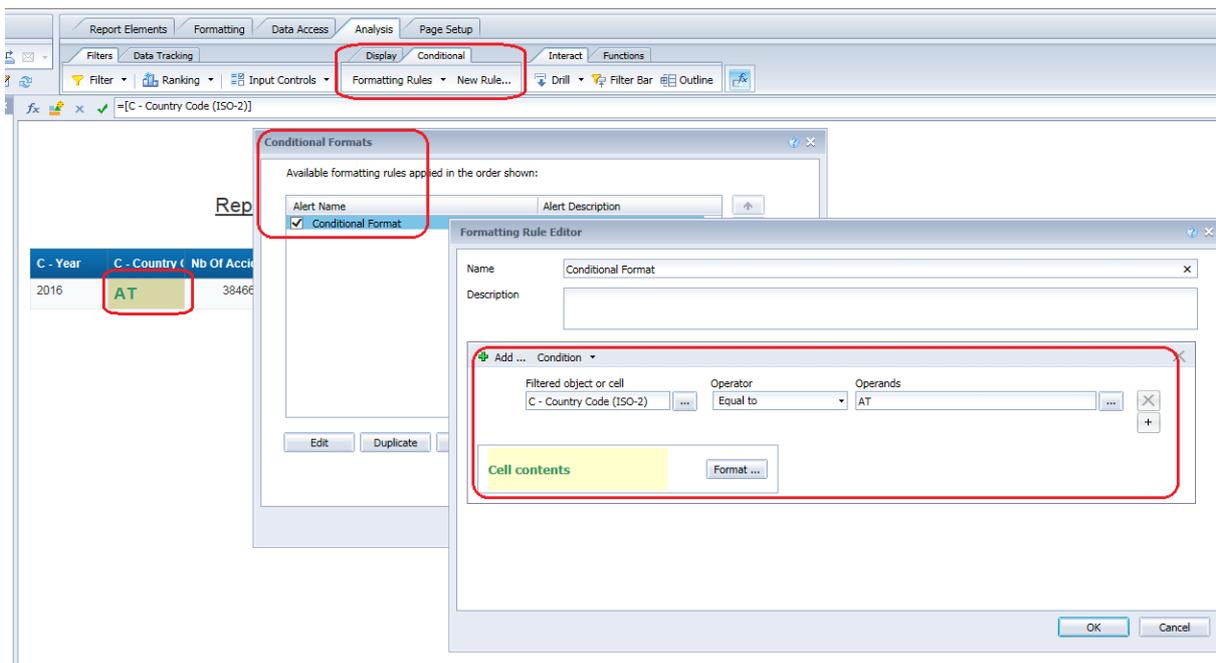




Select the desired format from the left box and choose the appropriate property to display the value. It's also possible to customise the predefined properties by selecting the check box "Custom". Now you can specify your own format. After you did this, it will be added to the list of properties for easy selection next time. For more detailed information about this it is suggested to consult the help online manual by clicking on the help button.

Analysis – Conditional Formatting Rules

Conditional Formatting Rules are used to highlight data in your report depending on criteria specified in the **rule**. To create a **rule**, you have to select on the "Analysis" tab the relevant sub-tab.



To enable an existing *conditional rule*, select the cell or cells to which you want to apply it. The rule will affect all highlighted cells. Now click on the Formatting rules in the relevant toolbar. A pop up will appear on your screen with a list of the existing report rules. You can select an existing rule to affect your selection by a click on the selection box to enable or disable the rule. Empty selection box is disabled; a V in the box is enabled.

Use the New Rule to create a new one or use the Formatting Rules popup list to edit, duplicate or remove an existing one.

1. Give the rule a name.
2. Give the rule a description.
3. Choose the object you want to compare
4. Select an operator to compare the object.
5. Choose a value to compare to; this can be another object, constant or variable.
6. Click "Format" button to format the cell
7. To create a more complex rule, click the button "+". A new rule to edit will appear in the pop-up.
8. Click "OK" when you finish to edit the rule.



Report sections

On the previous page, you saw that you could group data in a block using the "Break" function as illustrated below.

Austria	C - Year	Nb Of Accidents
Austria	2012	40831
	2013	38502
	2014	37957
	2015	37960
Austria	Sum:	155250

Belgium	C - Year	Nb Of Accidents
Belgium	2012	38057
	2013	35632
	2014	41481
	2015	40303
Belgium	Sum:	155473

You can use also sections to group data. The difference is that the grouped values appear as header outside the block instead of remaining within the block. However, there is a more important difference: a break only groups within a block, whereas sections group the entire report. You can add also other blocks (graphs, tables, etc....) to the section, projecting data from the same micro cube of the section: as illustrated below a table and graph with a country code section.

Austria

C - Year	Nb Of Accidents
2012	40831
2013	38502
2014	37957
2015	37960

Belgium

C - Year	Nb Of Accidents
2012	38057
2013	35632
2014	41481
2015	40303

To create sections, simply create a table and drag and drop the object you want to use as a section from the table to a place above the table where you want the title of the section. A second method is to right click on the object you want as section and choose "Set as Section" from the menu list. From now on you have a section, a section works like a report you can add blocks and objects to the section apply sorts on tables, etc.... The results in the report will be repeated for every value of the section.

Another advantage of sections is the easy navigation through the different sections. Click on the "Map" tab and select the "Map" sub tab if it is not selected by default. Now you will see a list with all the sections of the report. By a simple click on a section, you will jump automatically to the page where this section is displayed. This navigation works also if you export the document to pdf format. The navigation pane is illustrated in the next figure.



report 1

AT

C - Year	Nb Of Accidents
2013	38502
2014	37957
2015	37960
2016	38466

BE

C - Year	Nb Of Accidents
2013	35632
2014	41481
2015	40303
2016	40096

BG

C - Year	Nb Of Accidents
2013	7016
2014	7015
2015	7226

Change the header names

Normally the table headers correspond to the name of the object in the Universe. Sometimes it's better to change this name to a shorter or a better name. This can be done by clicking on the header you want to change and modify the formula in the "Formula" toolbar. Remove the complete formula you see and type the text you want.

Report 1

AT

C - Year	Nb Of Accidents
2013	38502
2014	37957
2015	37960
2016	38466

BE

C - Year	Nb Of Accidents
2013	35632
2014	41481
2015	40303
2016	40096

If you don't see the "formula bar", you can make the bar visible by clicking on the "Formula toolbar" button .



Remark: The standard headers (object names from the Universe) are explained in the CADaS glossary document. If you change this to other names you cannot use the descriptions from the glossary anymore. It is better to use as much as possible the standard naming from the Universe.

Group values

Group function available in the Analysis/Display tab, allows to create starting from a specific variable an alternative one having some of its values grouped in one value and others not. In the example, grouped value 'ATCZEL' of the new alternative variable "C-Country Code (ISO-2)+" contains the four indicated values and other values remain as in the original one. All indicators for value ATCZEL get therefore aggregated. Group function is available also from the right-click button menu.

The screenshot shows the SAP Analysis Tools interface. The main window displays a report titled 'Report 1' with a table of data. The table has three columns: 'C - Year', 'C - Country (ISO-2)', and 'Nb Of Accidents'. The data is as follows:

C - Year	C - Country (ISO-2)	Nb Of Accidents
2016	DE	308145
2016	IT	175791
2016	ES	102362
2016	ATCZEL	88748
2016	FR	57515
2016	BE	40096
2016	PL	33664
2016	PT	32299
2016	RO	30751
2016	NL	18749
2016	HU	16627
2016	SE	14086
2016	HR	10779
2016	SI	6404
2016	NO	4195
2016	LV	3792
2016	DK	2882
2016	IS	986
2016	LU	941
2016	CY	650

The 'Manage Groups' dialog box is open, showing a list of countries grouped under 'ATCZEL'. The countries listed are AT, CH, CZ, and EL. The dialog also shows a search bar and buttons for 'Group', 'Move to', 'Ungroup', 'OK', 'Cancel', and 'Apply'.

Sort values

From the same tab of the Group (see screenshot in green) you can apply sorts to the results displayed in the tables, to organize the order in which results are displayed in a column or a row.

You can apply sorts to any dimension, measures, or details displayed in a table. Sorting dimensions and details helps you organising results chronologically, while sorting measures helps you to see highest or lowest results at a glance.

Default sort order: This is sometimes referred to as the "natural" order. Depending on the type of data in the columns or rows, the results are sorted as follows:

Ascending numeric order for numeric data

Ascending chronological order for date

Ascending alphabetical order for alphanumeric data

Ascending sort order: When selected results are arranged in ascending order: the smallest value at the top of the column moving to the highest value at the bottom.

Descending sort order: When selected results are arranged in descending order: the highest value at the top of the column moving to the smallest value at the bottom (as it can be seen in the above example applied to 'Nb of Accidents').



Custom sort order: You define your own sort order.

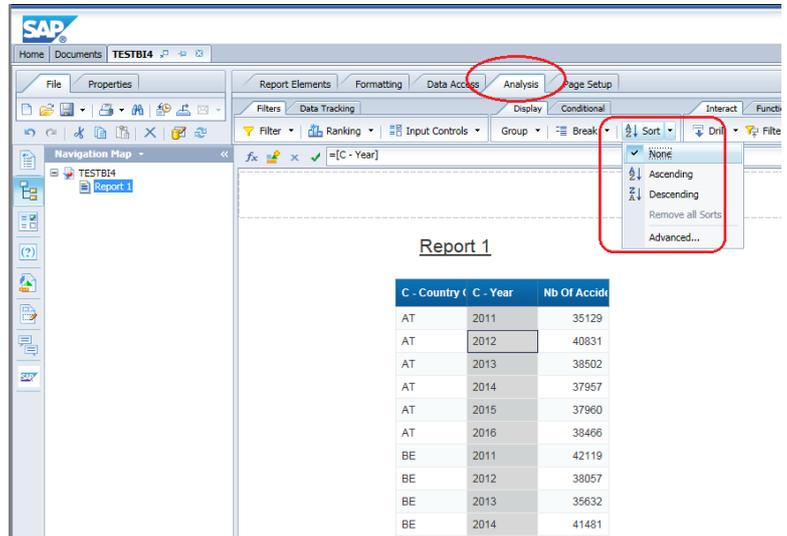
Remark: Ascending and descending sorts are applied to columns or rows. An ascending or descending sort impacts only the table on which you apply the sort and is independent of the sort on other tables in the same report.

However, if you apply to an object a custom sort, all tables displayed in the document using that object, inherit the custom sort. In fact applying a custom sort, sorts the data in the data provider, not just in the table.

To create any sort simply select the object you want to sort and click on the "Sort" button from the "Analysis > Display" tabs.

A menu list appears where you have to select between: "None", "Ascending", "Descending" and "Advanced" sorts.

When you select a type of sort, the button image will change accordingly to the choice. You can also remove all sorts from that menu list.

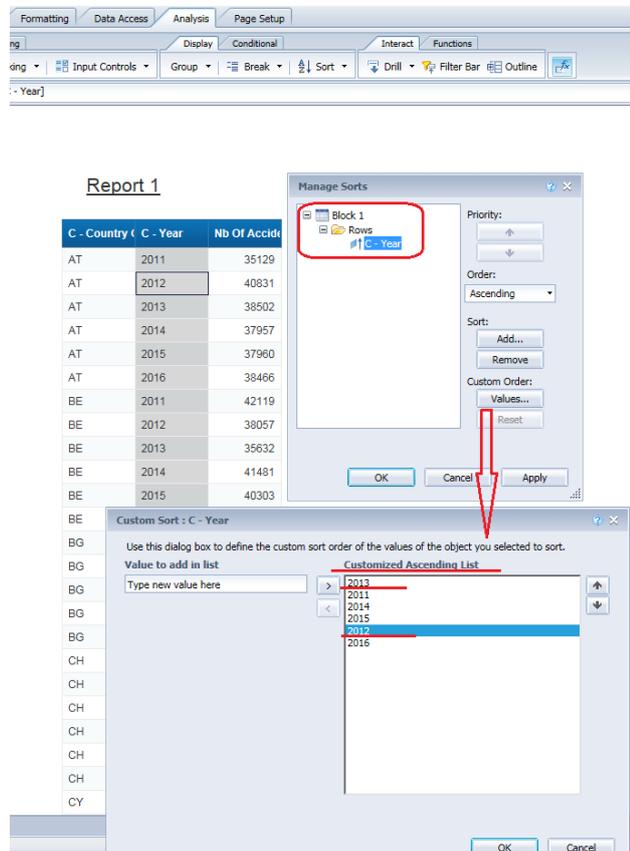


A second way to apply a sort is by using the mouse right button – which, as usual, repeat all functions available from the toolbars – and select "Sort" properties.

If you apply an Advanced Sort, two screens on the right will appear. You can select a value and use the arrows next to the pane that shows the values to move the value up or down in the list.

If there are values that are not in the list, but you want to sort them, you are able to add these values to the list and apply also a custom sort on these values. Type the value in the textbox under Value to add in List and use the arrow to add the value to the list. You can also use the arrow to the other way to remove the value from the list. Only added values can be removed from the list.

Click the "OK" button when you complete the sort order.





Predefined Functions of Aggregation

Some Predefined Functions available in the "Analysis > Functions" tabs make faster to build some column or row aggregation indicators such as Sum, Count, Average, Minimum value, Maximum value and Percentage.

The possibility to apply them depends on the object to which the function is assigned (if it contains textual or numeric values). When a function is applied to an object an additional row containing the requested summary indicator is placed at the lower bottom of the table and at the most right part of it if table is a crosstab.

The screenshot shows the BI4 software interface. The 'Analysis' tab is selected in the top menu. Below it, the 'Functions' dropdown menu is open, showing options like 'Sum', 'Count', 'Average', 'Min', 'Max', and 'Percentage'. The 'Sum' function is selected. Below the menu, a table is displayed with the following data:

C - Year	C - Country Code (ISO-2)	Nb Of Accidents
2016	AT	38466
2016	BE	40096
2016	CH	17577
2016	CY	650
Sum:		96789

5.6. Browse through the data for analyze

The term "Drill Mode" in BI4 refers to two related activities:

- Setting up a Web Intelligence document so that you and other users can analyse the reports in drill mode.
- Viewing the document in drill mode, either in one of the Web Intelligence report panels or while viewing the document in BI launch pad and analysing the data at different levels of detail.

Building a drillable document

1. Create a new document

2. In the "Query panel", click the "Show/Hide Scope of Analysis panel" button (it will eventually replace the Data Preview panel).

3. If necessary, resize the "Query Filters" panel and the "Scope of Analysis" pane by clicking and dragging the borders so

The screenshot shows the BI4 Query Panel interface. The 'Scope of Analysis Panel' is visible, showing a list of dimensions and measures. The 'Query Filters' panel is also visible, showing filters for 'Select Country' and 'Select Year of accident'. The 'Scope of Analysis Panel' is currently set to 'One level' and shows the following dimensions: C - Year, A-2 Month, C - Country Code (ISO-2), and A-4 Nuts Level 1 Description.



that you can view the objects displayed there. By default, the level of *scope level* for this query is set to none. The "Scope of Analysis" pane displays the hierarchical dimension objects from the result objects pane.

Note: The objects included in the "Scope of Analysis" pane are the dimension objects in your "Result Objects" pane that are part of a hierarchy in the Universe.

4. Click the "Display by Navigation Paths" option located below the "Data Tab" pane. The hierarchies view shows all the predefined hierarchies that have been defined in the Universe. Expand the hierarchy folders to see how the Universe objects are organized in hierarchies.

5. In the "Scope of Analysis" pane, click the drop down arrow to display the menu options. A list of levels appears in the drop down list.

6. Select the appropriate number of drillable levels for the report from the "Scope of Analysis" drop down list. All the objects that are at the selected number of hierarchical levels below the dimension objects you selected for your query appear in the "Scope of Analysis" pane.

When you run the query, only the objects you selected for the query appear in the table that is generated. The remaining object will appear in the "Data Tab", but they will not be projected into the report automatically.

This means that the document will contain more data than is shown in the report. The query will retrieve values for all the objects in the "Scope of Analysis" pane. The data will be available for your analysis, though it is not displayed immediately in the table.

7. Click "Run Query"

8. The query panel closes and values retrieved display in a vertical table. Depending on the number of objects and the level you choose, it can take some time to retrieve the data.

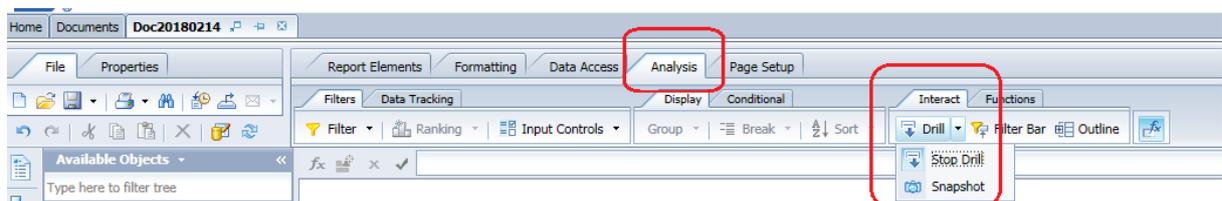
Note: In most circumstances, it is more effective to use a cross tab table to display information for drilling. But it will work also if you use a chart.

9. To change the table into a cross tab, click the right button somewhere in the table and choose "Turn to" from the menu. Select the "Cross Tab" picture and click "OK".

10. Save the document.

To activate drill down data

You must activate the drill mode to be able to drill down into the data in the hierarchy of a drillable report. Click on the "Drill" button > "Start Drill" from the "Analysis > Interact" tabs to activate the drill down mode.





When the drill mode is activated, all the values in the cells appear underlined with a hypertext. These hypertext links allow you to drill down the hierarchies to see data at a more detailed level.

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BE	<u>1397</u>	<u>1470</u>	<u>1486</u>	<u>1306</u>	<u>1213</u>	<u>1162</u>	<u>1089</u>	<u>1069</u>	<u>1071</u>	<u>944</u>
DE		<u>7495</u>	<u>6977</u>	<u>6836</u>	<u>6611</u>	<u>5838</u>	<u>5358</u>	<u>5083</u>	<u>4946</u>	<u>4476</u>
FR	<u>8029</u>	<u>7643</u>	<u>7720</u>	<u>7242</u>	<u>5731</u>	<u>5232</u>	<u>5318</u>	<u>4709</u>	<u>4620</u>	<u>4275</u>
IT	<u>6688</u>	<u>7061</u>	<u>7096</u>	<u>6980</u>	<u>6563</u>	<u>6122</u>	<u>5818</u>	<u>5669</u>	<u>5131</u>	<u>4731</u>
LU	<u>58</u>	<u>76</u>	<u>70</u>	<u>62</u>	<u>53</u>	<u>50</u>	<u>47</u>	<u>43</u>	<u>46</u>	<u>35</u>
NL	<u>1090</u>	<u>1082</u>	<u>993</u>	<u>987</u>	<u>1028</u>	<u>804</u>	<u>750</u>	<u>730</u>	<u>709</u>	<u>677</u>

If you move your mouse over the cells, a tool tip will appear.

	1999	2000	2001	2002
BE	<u>1397</u>	<u>1470</u>	<u>1486</u>	<u>1306</u>
DE		<u>7495</u>	<u>6977</u>	<u>6836</u>

Drill down to A-2 Month

You can drill down over only one dimension, click on a value in the vertical header or the horizontal header. The data will be refreshed and shows the data drilled down one level on the dimension value you selected. For example, if you select the value "1999" you will see the data for 1999 for all countries but over the dimension month instead of over the dimension year. You can drill down until there are no more levels.

If you want to drill down over both dimensions at ones, you have to select a value from the table. The data will be refreshed and will show the selected value over the two dimensions but one level lower. For example when you select 1397, you will see this value in a cross tab but over the dimensions month and NUTS level 1 instead of over year and country. You can drill down until there are no more levels.

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BE	<u>1397</u>	<u>1470</u>	<u>1486</u>	<u>1306</u>	<u>1213</u>	<u>1162</u>	<u>1089</u>	<u>1069</u>	<u>1071</u>	<u>944</u>
DE		<u>7495</u>	<u>6977</u>	<u>6836</u>	<u>6611</u>	<u>5838</u>	<u>5358</u>	<u>5083</u>	<u>4946</u>	<u>4476</u>
FR	<u>8029</u>	<u>7643</u>	<u>7720</u>	<u>7242</u>	<u>5731</u>	<u>5232</u>	<u>5318</u>	<u>4709</u>	<u>4620</u>	<u>4275</u>

Drill down to A-2 Month / A-4 Nuts Level 1 Description

Note: if you go a level deeper than the data you retrieved from the database, you will

see this as tooltip **Drill down to A-4 Nuts Level 3 Description (new query)**, next to the dimension you will see "(new query)". If you drill down to this level BO has to retrieve the data again from the database but one level deeper. This will take more time than the initial query so be careful if you drill down to the lowest level.

To drill up (back), simply click on the arrow next to the variable header. Values shown will now aggregate to the upper hierarchy level.

C - Year	A-4 Nuts Level 1 Description	 Nb of Accidents	Fatally Injured (at Drill up to C - Country Code (ISO-2)ays)
2016	ALFOLD ES ESZAK	6112	253
2016	DUNANTUL	4928	215
2016	KOZEP-MAGYARORSZAG	5587	139



To avoid to drill back up and then to drill down to see the data of another dimension value, you can use also the drop down box of the drill down dimension which can be activated clicking on the Filter Bar button.

For example, you have a hierarchy *Country Code / NUTS Level 1* and you already have drilled down one level so that your report displays all *NUTS Level 1* but you want to restrict the view to data for Belgium. In that case, you can simply select "BE" from the drop down list and data will be refreshed with the data for Belgium. For each drill down dimension in the hierarchy, the dimension will be added to this pane when you drill down to this level.

Report 1

C - Year	A-4 Nuts Level 1 Description	Nb Of Accidents	Fatally Injured (at 30 days)
2014	ALFOLD ES ESZAK	6004	274
2014	CESKA REPUBLIKA	21054	688
2014	DUNANTUL	4817	204
2014	KOZEP-MAGYARORSZAG	5026	148
2014	OSTÖSTERREICH	13798	164
2014	RÉGION DE BRUXELLES-CAPITALE / BF	3712	29
2014	RÉGION WALLONNE	11732	305
2014	SÜDÖSTERREICH	8556	112
2014	VLAAMS GEWEST	26037	393
2014	WESTÖSTERREICH	15603	154

Click the "Snapshot" value from the **Drill** button to have a copy of the current drill down view. A new tab containing the snapshot will automatically be added to your report.

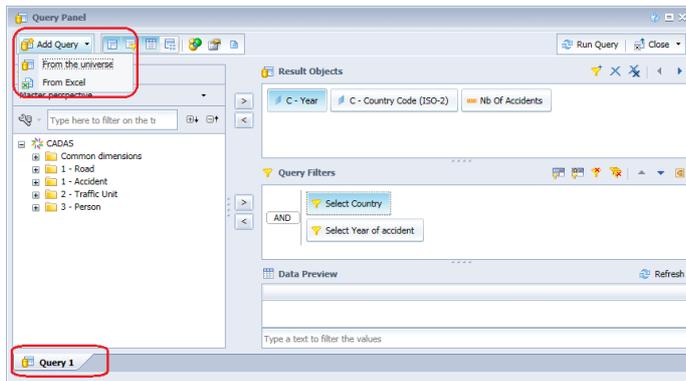
Report 1

C - Year	A-4 Nuts Level 1 Description	Nb Of Accidents	Fatally Injured (at 30 days)
2014	OSTÖSTERREICH	13798	164
2014	SÜDÖSTERREICH	8556	112
2014	WESTÖSTERREICH	15603	154
2015	OSTÖSTERREICH	13782	168
2015	SÜDÖSTERREICH	8734	117



6. BO REPORT CREATION ADVANCED SKILLS

6.1. Multiple queries



To add a new query to the report you have to open the Query panel and 1) click on the "Add Query" button or 2) right click on the existing query (Query 1) and choose "Duplicate Query" to copy the selected query.

If you choose "Add Query", you can choose the same or a different Universe than the one used for the first query. You can also choose an Excel sheet.

The new query can be therefore based either on a BI4 Universe or on an Excel Sheet of your own made available to BI4 which means that it has to be previously uploaded in one of "My Documents" (personal) documents.

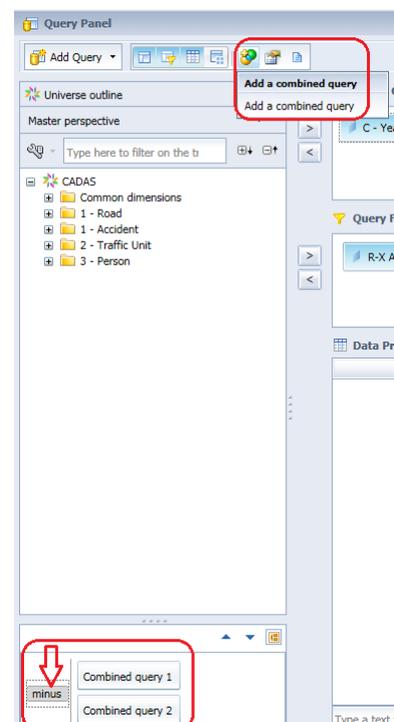
The results of the two above queries can – if we want to combine all data in the same report – be merged at report level by using "Merge" function of Data Access tab

To use both queries in the same table, the dimensions have to be merged. This happens automatically. You will see in the Design environment one common name for the dimension. If you open the tree, you will find the different dimensions from the different queries. If you use data from other sources, it may be possible that similar dimensions are not automatically merged with each other. If the names are different, BI4 cannot identify that this dimensions are the same. Merging dimension is like joining two fields. So the data has to be similar or your results will be incorrect because of duplicates and mismatches and an error message will appear in this case. Merging dimensions will be explained in detail at following point "6.2. Merging dimensions".

Next to the above possibility it is also possible to create in one single query the combination of multiple queries using the same Universe and joined by the logical SQL operators Union/Intersection/Minus.

The functionality is available in the Query panel with the "Add a combined query" button.

By using this button, you can choose the relation between the two queries. If you click on this button, a pane will appear like the screenshot on the left, where you see the relation between the two queries. If you double click on the relation word (here minus), you can switch between the different relations: intersection, union and minus. Click until you have the desired relation.





6.2. Merging dimensions

If you want to combine in one report the different objects of two queries (for example one based on Universes and one on an Excel sheet), it is required to define and merge the common dimensions of both queries.

Use the "Merge" button of the "Data Access" tab to manage the merged dimensions of the Universes.

You need similar data to merge the dimensions.

In CARE / CADaS Universes, similar data are for example data over year and country codes. These two dimensions can be merged and afterwards you can use the extra data in one table. In the example below, we will add the Data Source from the "DATA_AVAILABILITY_CADAS" Universe to the "CADAS" Universe. This makes it possible to show, for example, next to the country code also the loading protocol CADaS or CARE, this together with the Number of fatalities over year and country code.

C - Year	C - Country (Nb Of Accid)	Nb Of Accidents
2016	AT	38466
2016	BE	40096
2016	CZ	21387
2016	HU	16627

Available Objects dialog box showing the selection of 'Country Code (ISO-2)' from both Query 1 and Query 2. The dialog also lists other objects like 'C - Year', 'Nb Of Accidents', 'Side', 'Merged Dimensions', 'Country Code (ISO-2) (Query 1)', 'Country Code (ISO-2) (Query 2)', and 'Variables'.

clicking on "OK".

If we imagine that Query 1 contains data from CADaS Universe as shown above and Query 2 contains the Excel sheet here on the right, that two queries were merged as explained, below you can see the result of the two merged queries.

Without the merge function it would not be possible to show this in only one table. Merging dimensions is very powerful when you want to use some external data of your own.

After you clicked on the "Merge" button, the screen at left will appear. At first you see the two queries with relevant objects.

Multiple select (CTRL + click) the two objects you want to merge - they will get highlighted - and click "OK".

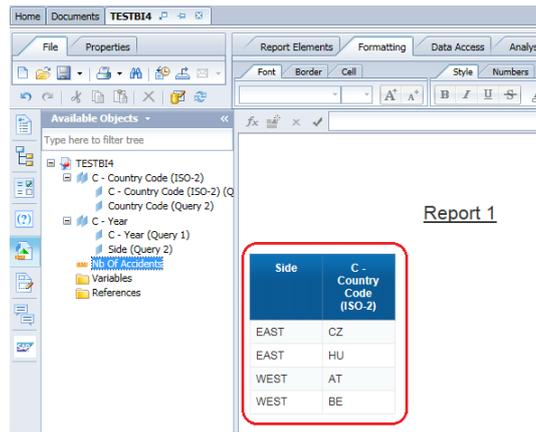
Repeat this process until all common dimensions are merged.

More are merged dimensions better it is to create a merged report.

Be careful when merging dimensions, that the data is homogenous (type and values) or the result will be unpredictable.

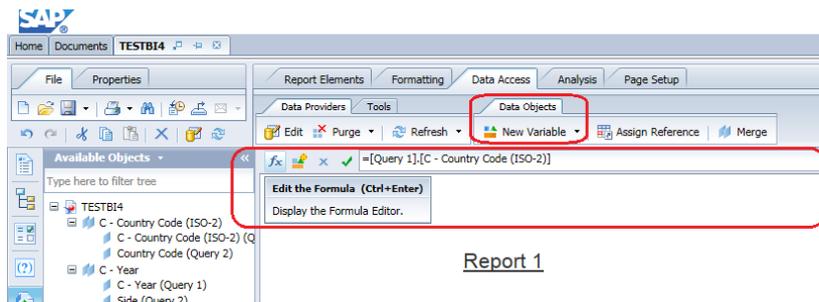
When you finish close the window

	A	B	C
1	Country Code	Side	
2	AT	WEST	
3	BE	WEST	
4	HU	EAST	
5	CZ	EAST	
6			
7			

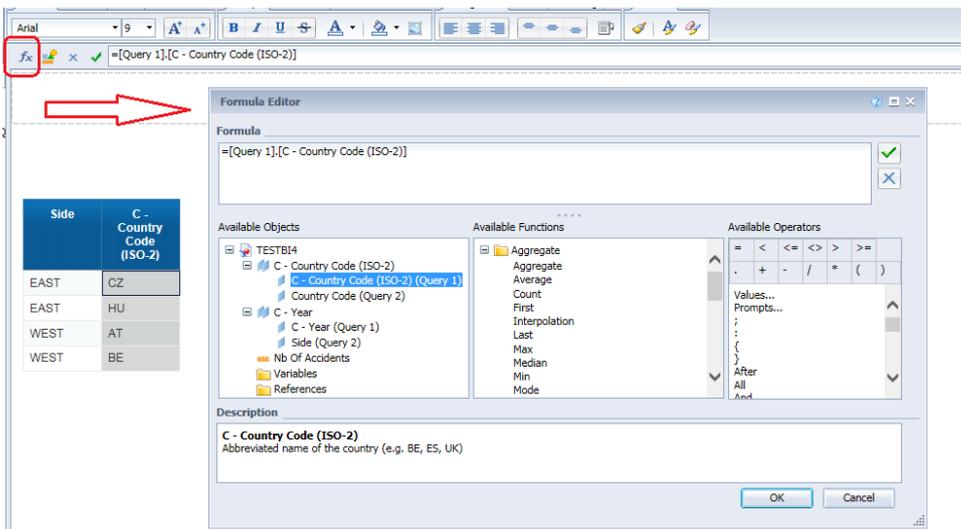
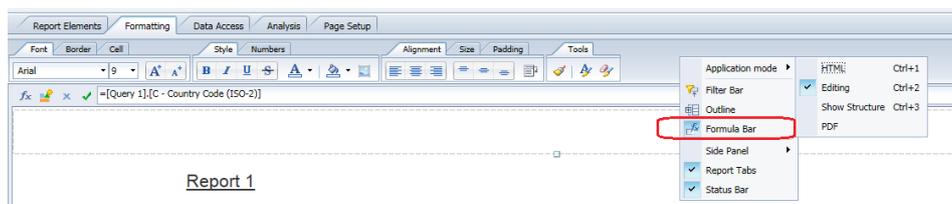


6.3. Data manipulation / Formula editor

Every object in BI4 can be modified and manipulated (e.g. dates, text, numbers). You can create complex calculations on numeric indicators or manipulate text objects like merging two objects. We used already once the formula editor to change the column names of a table. Now we will use the wizard of the formula editor to manipulate data objects.



If you don't see the formula bar, you can make it visible by right clicking on the toolbar area and selecting the relevant line.



Click on the Function button  of the Formula Bar to open the "Formula Editor" wizard.



You can select the function you want from the Available Functions list. Just double click on the function to copy it to the formula pane. If you want more information about the function, click on the "more on this function" link.

In the description you will see also more information about the function.

Functions are always applied on data objects so in the left pane you can select the data object on what you want to apply the function. It is possible to combine multiple functions together. Click on "OK" when you are ready with your function.

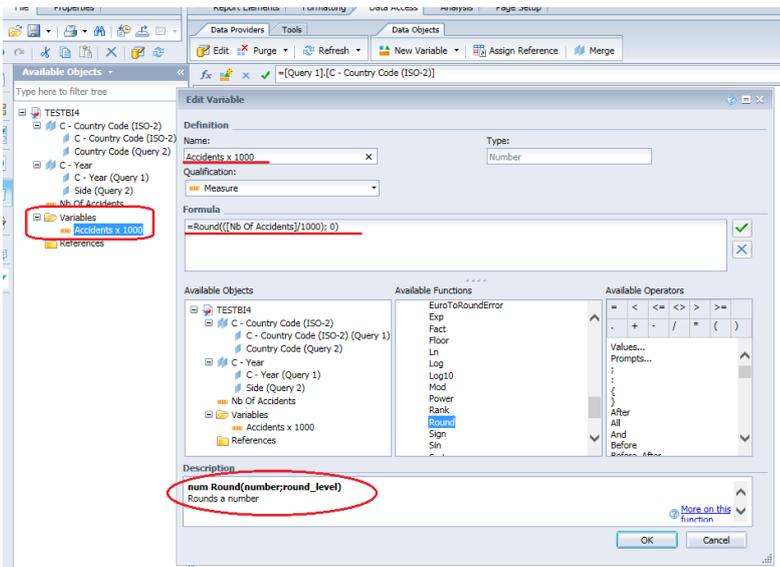
6.4. Create a variable

If you want to use your formula in different places in your report, it is better to create a distinct variable for this instead of retyping each time the formula.

It will not only reduce the time to create your report, but it will also help you to maintain the report. If you have to change the formula, you simply change the variable and the formula is changed everywhere the variable is used.

To open the Variable editor, click on the "New variable" button of the Data Access tab or on the formula bar (see image above).

The following popup will appear on your screen. You can use the variable editor also to create a title for your report. Instead of typing each time the title on every tab of your report, you create a variable with the title and simply put the variable as title on your report.



1. Enter the "Name" for your variable

2. Choose the "Qualification": dimension, detail or Measure.

3. Type the formula in the "Formula" text box. This works the same as the formula editor.

4. Click on "OK" to add the variable to the data objects in your report.

5. From now on, you can use the variable like an object from the

Universe.

It's advised to use as much as possible variables as from the moment you need something more than ones, it is better to create a variable for this. It is obvious that the use of variables will help to maintain the report.



6.5. Share reports with colleagues

There are many possibilities to share your reports with colleagues.

Export it locally to your machine in Pdf, Excel or CSV data (Text Comma Separated Values) format

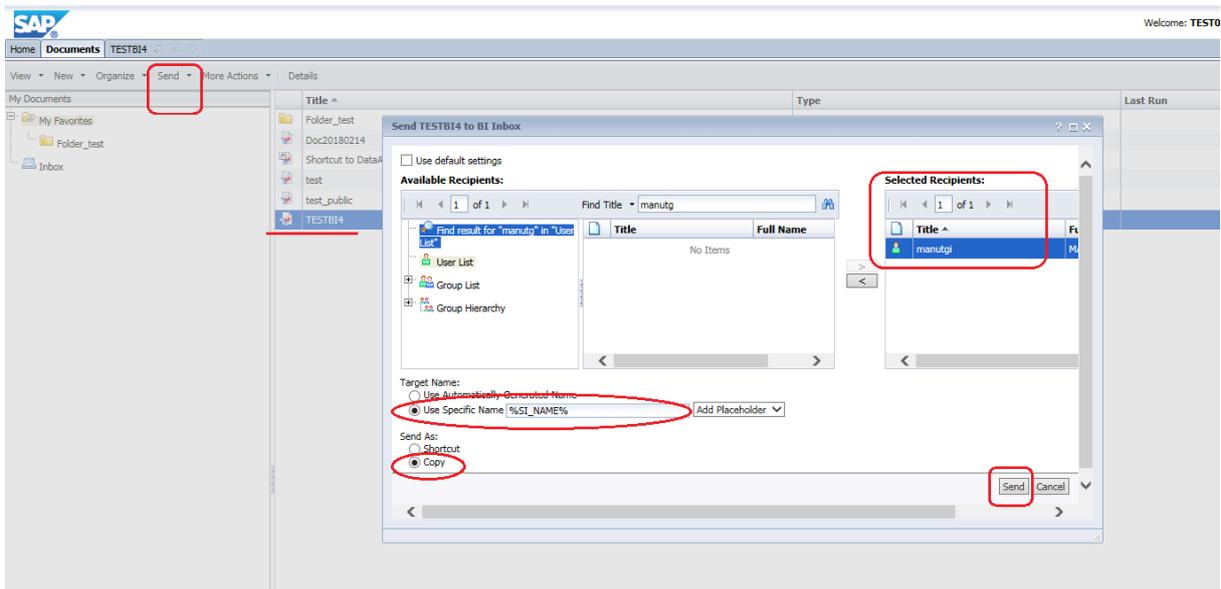
Send the report to a BI4 inbox of another user.

Ask CARE staff share a report (to be validated by CARE team) with all users and make it available in the Public Folders.

To export your report locally, see here chapter "3.4. Export a report locally to your pc".

To send the report to a BI4 inbox:

- Select a report from BI launch pad.
- Click on "Send / BI inbox" option to open a specific window.
- Uncheck "Use Default Setting".
- Select a recipient from the left user list and move it in to the right "Selected Recipients" list.
- Define the target name of the report (as it will be seen by the recipient) and if it is a copy or a shortcut of it.
- Click on "Send" button



You can publish (or save) a report in your Personal Folders (or My Documents) but not in the Public Folders. In case you have a report to share with others European experts, you can send it to the inbox of user localadmin near of an email to MOVE-CADAS@ec.europa.eu in order to inform CARE Team.

The report will be verified and if validated by DG MOVE, it will be published in the public folders.



6.6. Automatic refresh / schedule a report

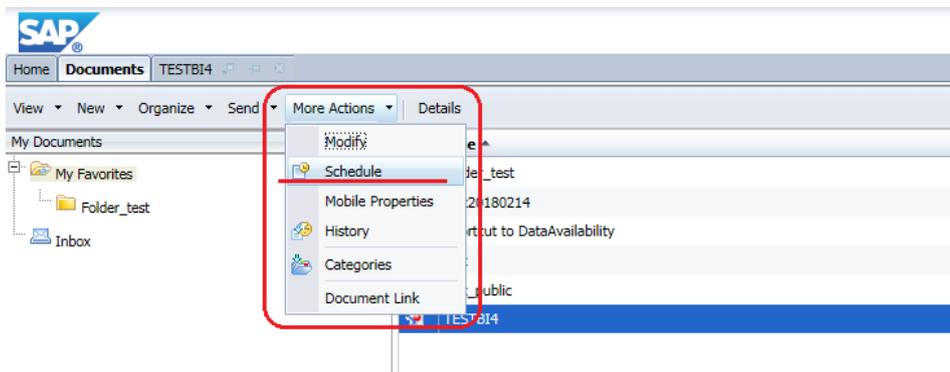
If you need to refresh one of your personal reports very often, it is easier to schedule this operation instead of always refreshing it manually.

If you schedule the automatic refresh of a report, you can also choose a method to distribute the report to other people.

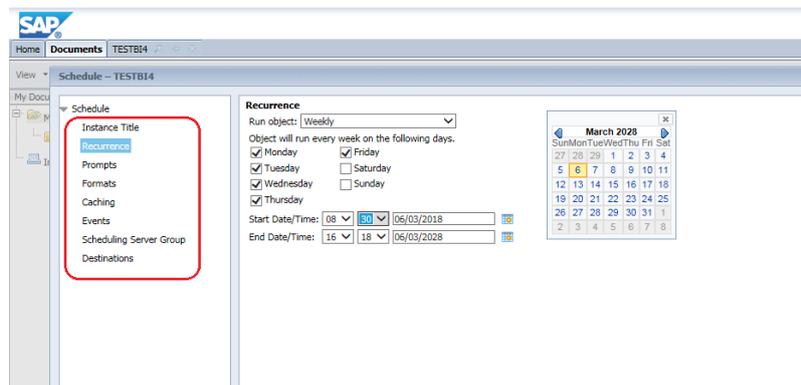
Reports can be sent to BO inboxes, to someone's email address or put it on an ftp drive.

How to schedule a report

Select from BI launch pad the personal report you want to schedule. Open the "Actions" menu and choose "Schedule" from the menu list. The next screen shows you the different settings to schedule the report.



Browse through the tree on the left site of the pane to set the correct settings: Instance title, Recurrence, Format and destination, Caching, Events and Scheduling server group.



Click on the title to open the details under this title. Uncheck "use the job server's defaults" to select your own inboxes. This is similar on other screens uncheck "Use default" to see more settings. After you configured all the settings, click on "Schedule" to schedule the report. Depending on the settings, you will find the refreshed report in the report history or if you choose to send it to the BO Inbox in the inbox. Other settings like ftp and email are also possible. It is obvious if you have chosen this option that you will find your report in the ftp folder or in your inbox of the email account.

Click on lower right button "Schedule"

How to see the history of previous versions of the report

Select again the report you want to see and open the "Actions" menu. Choose "History" from the menu (see above).



The next screen will show you every run of the report. Use the filters to search the correct version of the report.

Instance Time	Title	Status	Created By	Type	Parameters
06-Mar-2018 16:37	TESTBI4	Success	TEST01one	Web Intelligence	AT;2016

Click on the instance time to open the report and view the results of this run.

Reports with status failed can't be opened.



ANNEXES

Annex 1: Supported browsers / Compatibility

The following matrix shows the latest compatibilities – browsers and Java – between BI4.2 and User machines (Browsers / Java / OS within red frame):

SAP BusinessObjects BI Platform 4.2 Browser Support by Operating System

Web Browser	Java	Windows Server				Windows Desktop				Mac OS	
		Server 2008 SP2 x64	Server 2008 R2 SP1 x64	Server 2012 x64	Server 2012 R2	Windows 7 SP1	Windows 8	Windows 8.1	Windows 10 (7)	Mac OS X 10.3	Mac OS X 10.10
Microsoft IE 10 desktop version ^{(*) (7)}	Oracle JRE 7, 8 ⁽⁶⁾	-	✓	✓	-	✓	✓	-	-	-	-
Microsoft IE 11 desktop version ^{(*) (7)}	Oracle JRE 7, 8 ⁽⁶⁾	-	✓	-	✓	✓	-	✓	✓	-	-
Mozilla Firefox ESR 38.x ^{(2) (5)}	Oracle JRE 7, 8 ⁽⁶⁾	✓	✓	✓	✓	✓	✓	✓	✓	-	-
Google Chrome ^{(*) (7) (8)}	Oracle JRE 7, 8 ⁽⁶⁾	✓	✓	✓	✓	✓	✓	✓	✓	-	-
Safari 7 ⁽⁴⁾	Oracle JRE 7 ⁽⁴⁾ , 8 ⁽⁶⁾	-	-	-	-	-	-	-	-	✓	-
Safari 8 ⁽⁴⁾	Oracle JRE 7 ⁽⁴⁾ , 8 ⁽⁶⁾	-	-	-	-	-	-	-	-	-	✓

Only 32-bit browsers are supported, except for Safari on OS X, which is only available as a 64-bit browser. In the case of IE10 and IE11, this means "Enhanced Protected Mode" (64-bit content processes) is not supported; the IE 10 application itself (the "Manager" process) is always 64-bit on 64-bit systems and this is supported.

Touch screen interactions are not supported.

(*) [1] Analysis edition for OLAP and BI LaunchPad on SAP NW Portal (SAPNote 2056982) do not support Compatibility View in IE10 or IE11 [KBA: 2106260 - In IE11 can't select a cascaded prompt value SAPBI WEBI]

(*) [2] For more information about Firefox Extended Support Releases (ESR): <http://www.mozilla.org/en-US/firefox/organizations/faq/>

(*) [3] The current version of Google Chrome is supported based on testing with earlier versions of Chrome during development. Although SAP will work to maintain compatibility with Google Chrome, please be aware that issues may be introduced if and when Google makes significant changes to Chrome between rapid-releases.

(*) [4] The Web Intelligence Java Applet (Rich Internet Application) is supported on Mac OS X. For details see [SAP Note 1906633](#).

(*) [5] For information regarding limited browser support on Linux, please refer to [SAP Note 1910135](#).

(*) [6] Crystal Reports Java Applet viewer will be deprecated soon, also note it will not launch in Chrome version 45 onwards due to removal of NPAPI support in Chrome. Use the Crystal Reports DHTML ("Web") viewer instead.

(*) [7] Edge (Spartan) browser on Windows 10 is not supported.

(*) [8] From Chrome version 45 onwards, NPAPI is not supported, Web Intelligence Java Applet will not launch, refer to SAP Note 2196748 and 2156305 for details.

(*) [9] Beginning January 12, 2016, Microsoft will support the most current version of Internet Explorer available for a supported operating system.. Only the current version of IE will receive technical supports and security updates. Please refer SAP KBA

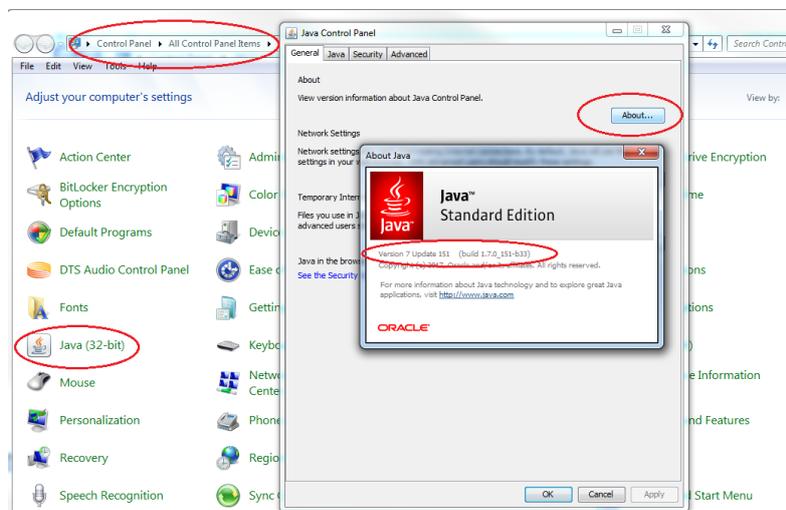
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Customer 7

To check the version of your browser, click on *Info* or *About* to verify it.

In order to check the Java version installed on your machine:

- 1) go to **Control Panel**
- 2) click on the **Java** icon
- 3) read the **version number** after clicking on button **about** in the **General** tab



The above verifications may change depending on the browser and OS installed.



Annex 2: Export

If the export to Excel doesn't work, please contact your local helpdesk to check the credentials on your pc. With an administrator account it should work.



Annex 3: Differences between manual and BI4 environment

If the menu items in Web Intelligence are not the same as in the manual, contact the European Commission to ask for the sufficient rights.

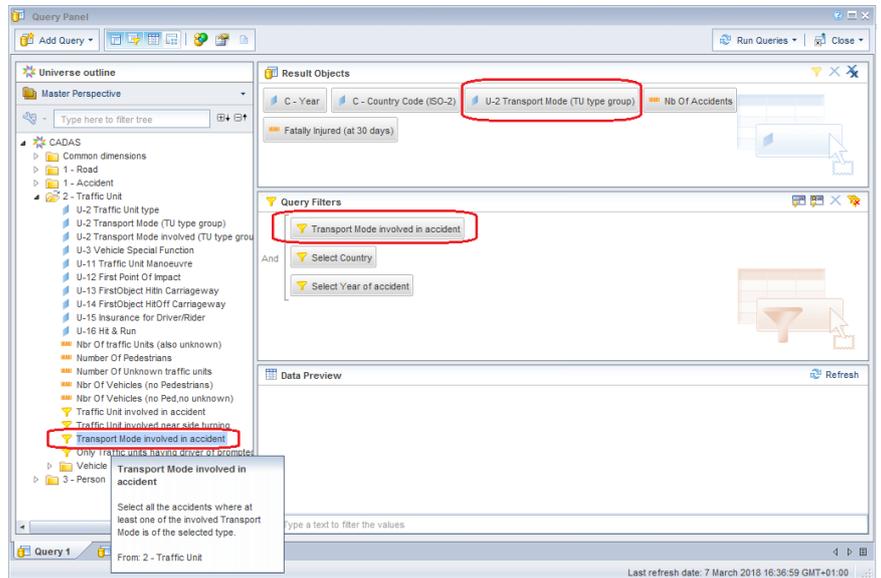
Email contact: MOVE-CADAS@ec.europa.eu



Annex 4: Considerations about special BI4 Objects

Predefined Filter "Transport Mode involved in Accident":

When this predefined filter is used, the Query will select all accidents where at least one (or more) Transport Mode selected (to choose at Execution time) are involved in the Accident.



Comparison 1) with Transport Mode involved = pedal cycle 2) without filter

1)

C - Country Code (ISO-2)	C - Year	U-2 Transport Mode (TU type group)	Fatally Injured (at 30 days)
HU	2016	bus or coach	0
HU	2016	car + taxi	0
HU	2016	heavy goods vehicle	1
HU	2016	lorry, under 3.5 tonne	0
HU	2016	moped	0
HU	2016	motor cycle	0
HU	2016	other	1
HU	2016	pedal cycle	73
HU	2016	pedestrian	5
HU	2016	unknown	0
		Sum:	80

2)

C - Country Code (ISO-2)	C - Year	U-2 Transport Mode (TU type group)	Fatally Injured (at 30 days)
HU	2016	bus or coach	10
HU	2016	car + taxi	269
HU	2016	heavy goods vehicle	12
HU	2016	lorry, under 3.5 tonne	15
HU	2016	moped	16
HU	2016	motor cycle	48
HU	2016	other	11
HU	2016	pedal cycle	73
HU	2016	pedestrian	152
HU	2016	unknown	1
		Sum:	607

Please be careful then, especially if report displays the object "Transport Mode", as numeric indicators (Person casualties) refers only to a limited part of Accidents.

1) Fatalities (distributed by Transport Mode) concern only accident where at least one (or more) pedal cycle was involved.

2) Fatalities (distributed by Transport Mode) concern all accidents.

Object "Number of vehicle involved":

The object refers to the number of vehicles (does not include Pedestrian) involved in an accident.

It can be used as a filter and/or as a dimension near of a numeric indicator (below Number of Accidents) to eventually understand the quantity of accidents by their size (in terms of vehicles).



Number of Vehicles involved in Accident

C - Country Code (ISO-2)	C - Year	Number of vehicles involved	Nb Of Accidents
HU	2016	1	6572
HU	2016	2	8858
HU	2016	3	958
HU	2016	4	181
HU	2016	5	49
HU	2016	6	4
HU	2016	7	3
HU	2016	10	1
HU	2016	13	1
		Sum:	16627

Predefined Filter "Accidents with foreign driver involved":

When this predefined filter is used, Query will select all accidents where at least one "Road user Type" = "Driver" having a "Nationality" = "Foreign" was involved in an accident.

Please be aware that Person Nationality is not always provided by the countries delivering their datasets to DG MOVE. The outcome of this is that the query may not return a complete overview of accidents with foreign driver involved.

Object "Injured" and "Victims":

Following our continuous approach of adding new objects for users, we have added 3 new measures in the CaDAS Universe:

- Injured (total)
- Injured (total as reported)
- Victims

- Injured (total): This measure is a total of Seriously Injured (at 30 days) + Slightly Injured + Injured (injury severity not known)
- Injured (total as reported): This measure is a total of Seriously Injured (as reported) + Slightly Injured + Injured (injury severity not known)
- Victims: This measure is a total of Fatally Injured (at 30 days) + Seriously Injured (at 30 days) + Slightly Injured + Injured (injury severity not known)