

tds ▶ exposure

WP 6 – A TDS Information System

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Stakeholder Meeting

Brussels, 8th October 2015



Agenda

- ▶ Objectives of WP6
- ▶ TDS Module in FoodCASE
- ▶ Usability testing
- ▶ Data quality framework
- ▶ TDS extensions in FoodCASE
- ▶ European TDS database

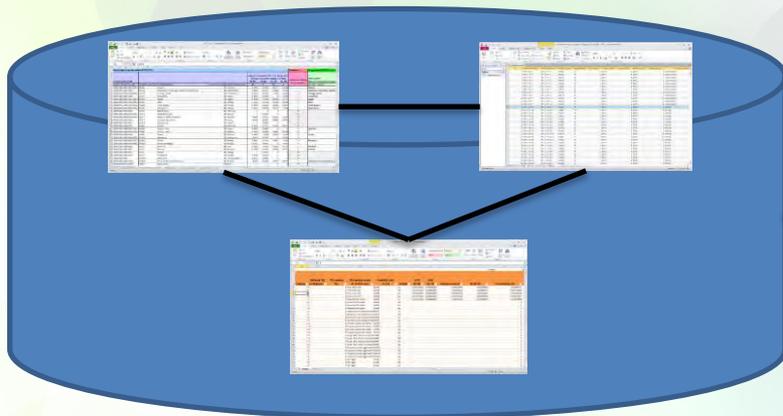


Objectives of WP6

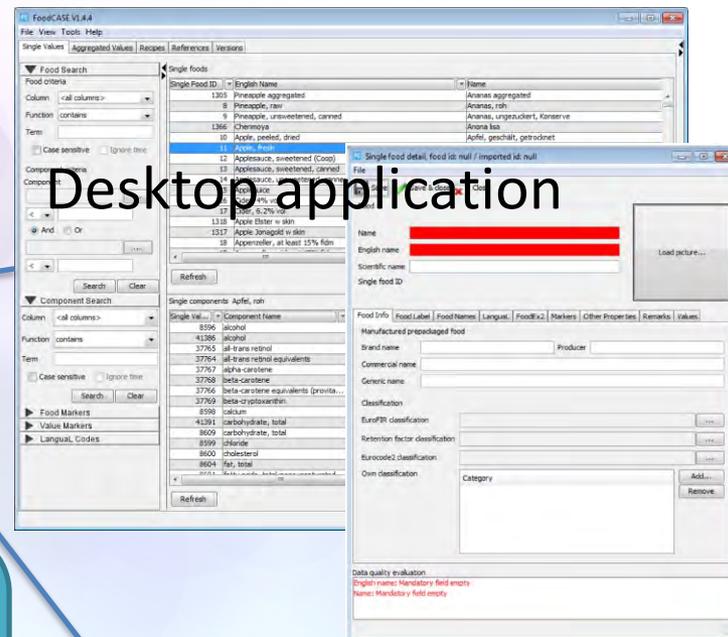
- ▶ Collect requirements for a TDS information system
- ▶ Create TDS information system
- ▶ Proposal of data structure for TDS data
- ▶ Create an automated quality framework for TDS data
- ▶ make a European TDS database available for risk assessors and risk managers



FoodCASE



Desktop application



Website



Food Composition

Food Name	
Apple, fresh	
Pear, fresh	
Component	Value
Protein	0.3g/100g
Vitamin C	5mg/100g

Food Consumption

Person	
Person1	
Person2	
Food	Amount
Apple, raw	1 piece
Pear, fresh	1 piece

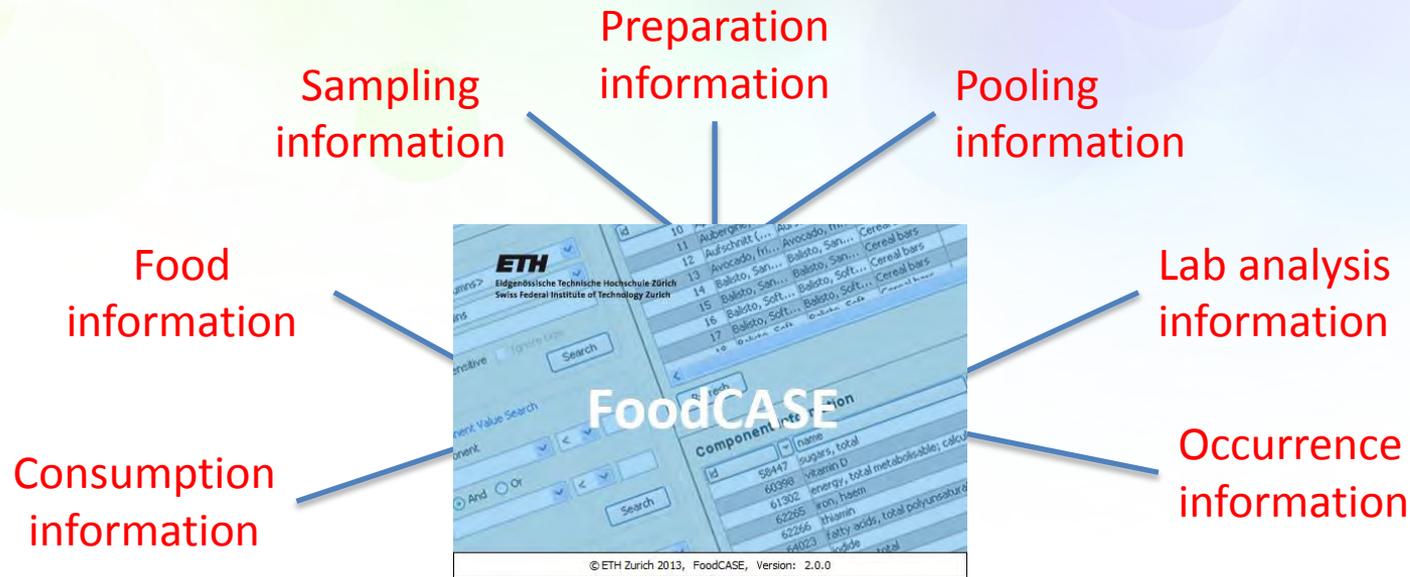
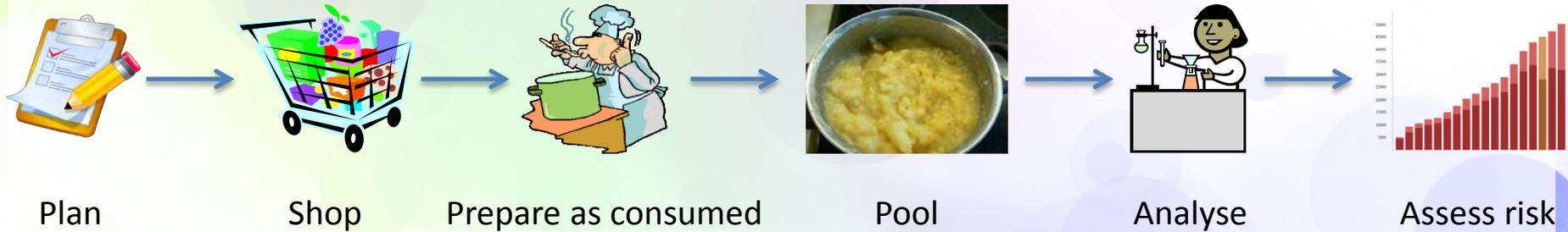
Total Diet Study

Food Name	
Apple, fresh	
Pear, fresh	
Compound	Value
Mercury	1mg/100g
Selenium	1mg/100g



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TDS Module in FoodCASE



File

TDS
Id
Pool
Engl
Scie
Stud
Pool
Orig
Stu
Clas
Foc

FC TDS Pool value detail

File

Save Save & close Close

Pool name	Apfel	Value id	94
Substance name	Total copper		
Value	0.37664660963	Value type	(MN) mean
Unit	(mg) milligram	Matrix unit	(TKG) per kg total food

Value Lab analysis Markers Remarks Files

Measurement limits

LOD	0.043333333333333335	LOQ	0.13
LOR			

Statistics

Mean		Median	
Minimum		Standard deviation	
Maximum		n	
Uncertainty	0.07838336039066102	Maximum uncertainty	0.07838336039066102

Date

Verifying date Verifying by

Usability testing

- ▶ Usability study with project partners
- ▶ 6 tasks to enter information in FoodCASE such as sampling, pooling or occurrence data

1. The user interfaces/masks are built intuitively to complete the task.

2. How simple/difficult was it to complete this task?

3. The time you needed to complete the task is appropriate.

Answer	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	[no answer]
	Very simple	Simple	Neutral	Complicated	Very complicated	[no answer]
Rating	5	4	3	2	1	-



Usability testing results

Average rating

- Question 1: between 3.46 and 3.79
- Question 2: between 3.5 and 4.0
- Question 3: between 3.54 and 3.86
- ▶ Manual and more introduction necessary
- ▶ Size of certain mask are too big for small screens
- ▶ Add possibility to selected several TDS foods and create a pool
- ▶ Add copy function for food and samples
- ▶ Terminology is confusing



Data Quality Framework

- ▶ Input validation

Validate data on every input mask

- ▶ Quality analysis

Validate complete data set



File

 Save  Save & close  Close

Pool name	<input type="text" value="gemischter Salat"/>	Value id	<input type="text" value="49"/>
Substance name	<input type="text" value="Total copper"/>		
Value	<input type="text" value="0.12"/>	Value type	<input type="text" value="(MN) mean"/>
Unit	<input type="text" value="(mg) milligram"/>	Matrix unit	<input type="text" value="(TKG) per kg total food"/>

Value

Measurement limits

LOD	<input type="text" value="0.143333333333"/>	Unit	<input type="text" value="(mg) milligram"/>	Matrix unit	<input type="text" value="(TKG) per kg tota..."/>
LOR	<input type="text" value=""/>	Unit	<input type="text" value=""/>	Matrix unit	<input type="text" value=""/>
LOQ	<input type="text" value="0.13"/>	Unit	<input type="text" value="(mg) milligram"/>	Matrix unit	<input type="text" value="(TKG) per kg tota..."/>

Data quality evaluation

Value is below LOD and LOQ

If value is lower than LOD, value should be empty and type must be 'below LOD'

LOD is lower than LOQ

Quality analysis

- ▶ More complex quality checks such as:
 - Does each food have a value for selenium, mercury and manganese?
 - Is there a preparation date after product's expiry date?
- ▶ Constraints are user-definable
- ▶ Results are presented in graphical and table form



TDS extensions in FoodCASE

- ▶ Food consumption aggregator
- ▶ Substance prioritisation tool
- ▶ Mobile shopping list



Food consumption aggregator

FC Consumption Food Aggregator Wizard

Select Field to Aggregate Over

- FoodEx2
- Category
- foodId
- name**
- englishName
- genericName
- genericNameEnglish

Aggregate Over: name

Name

18-25 m

18-25 f

Unit: g/kg bw/day

Add Column Remove Column

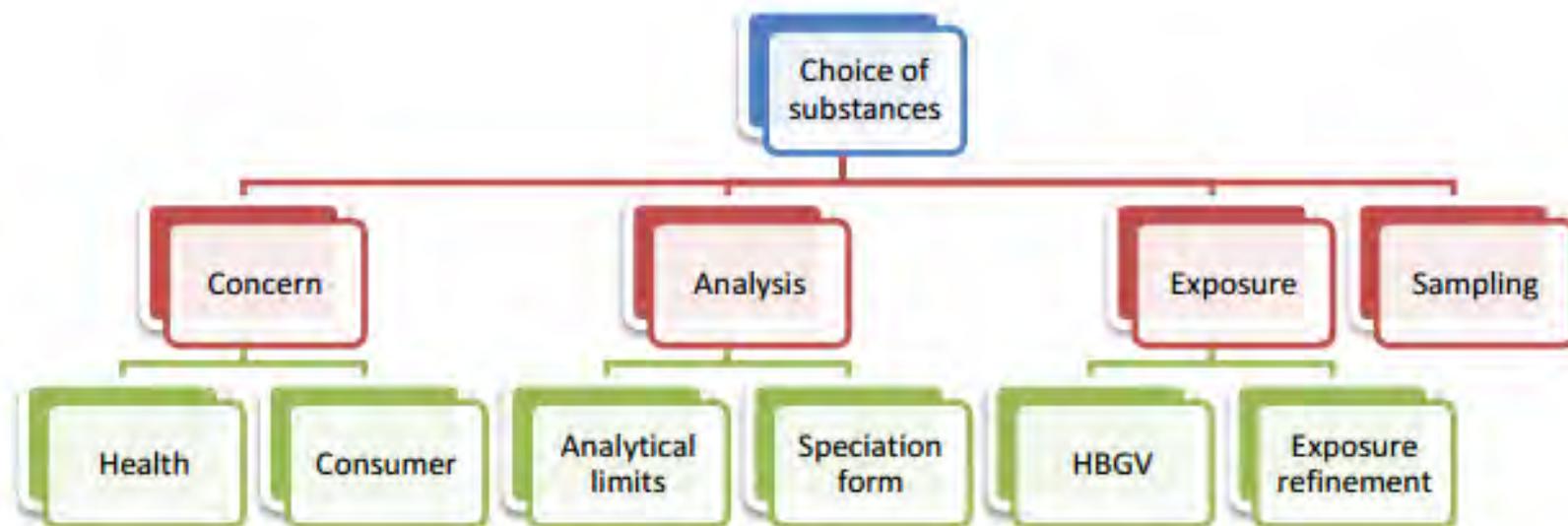
Food name	18-25 m	18-25 f
Apple	0.66	1.2
Pear
...		

Search Clear

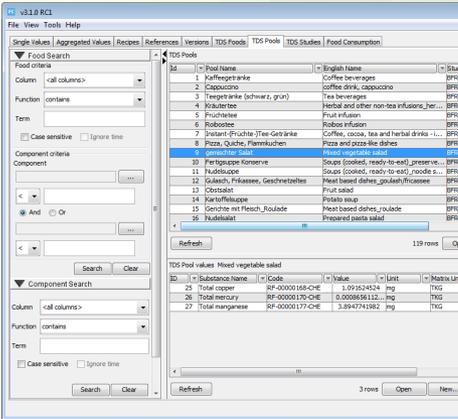


Substance prioritisation tool

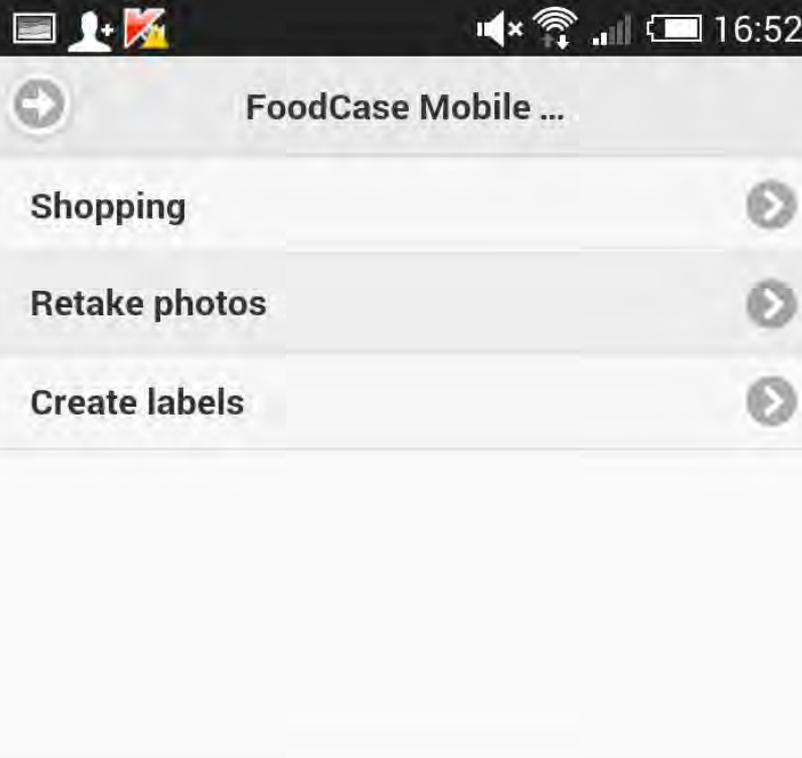
- Based on the defined approach in WP2



Mobile app



Prepare shopping list



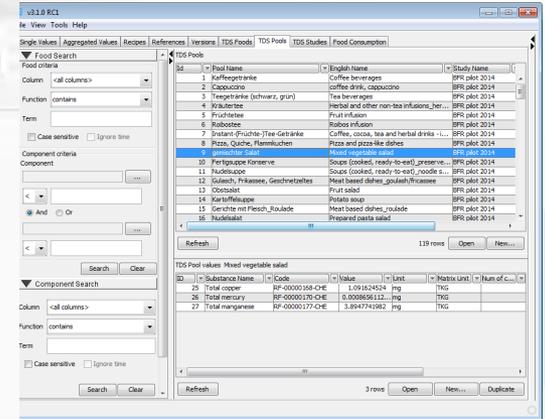
Sync:



Recalculate Order

bla

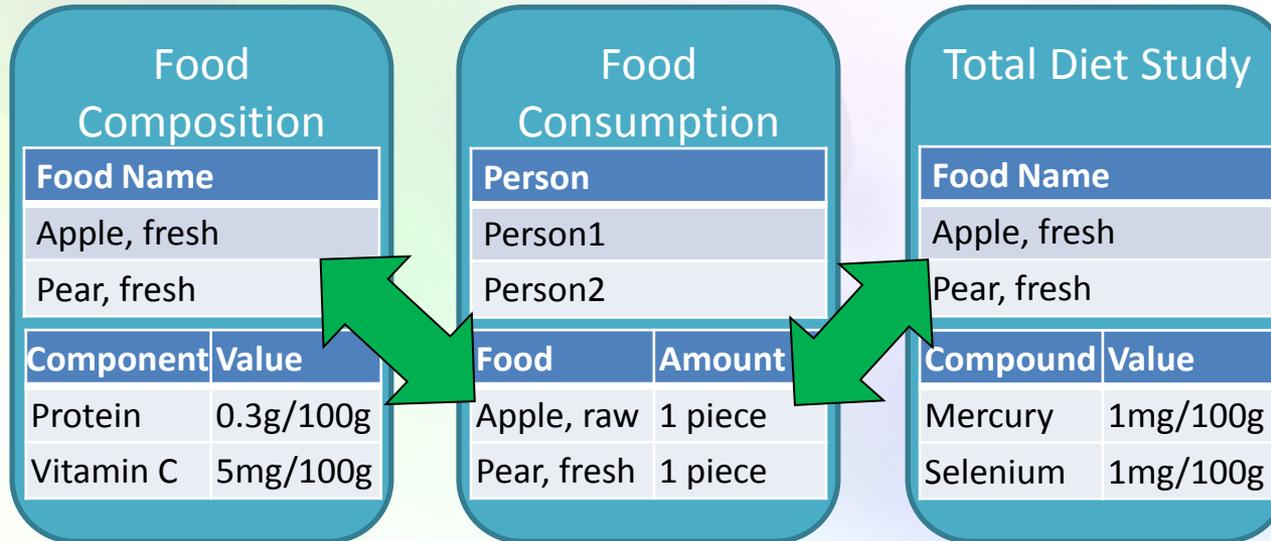
Sync on/off



Upload



TDS data in context of food data



- ▶ FoodCASE makes automated food linkage proposals.
- ▶ FoodCASE calculates the similarity of foods and provides a list of best candidates to the user.
- ▶ Calculations are based on former matches, food name, synonyms, category, (FoodEx2 and LanguaL).
- ▶ An evaluation with Swiss food composition and consumption data showed that the top candidate was the perfect match in 70% of the cases and in 11% of the cases the perfect match was under the first 5 candidates.



European TDS database

- ▶ FoodCASE installation at ETH Zurich with data from CZ, DE, FI, FR, IS and PT.
- ▶ Access is currently restricted to data providers and access rights are currently discussed within project.



Thank you for your attention

