Powerful data extraction and data collection: What is needed?

Joint final workshop of the EFSA-BfR traceability projects | 23.01.2025

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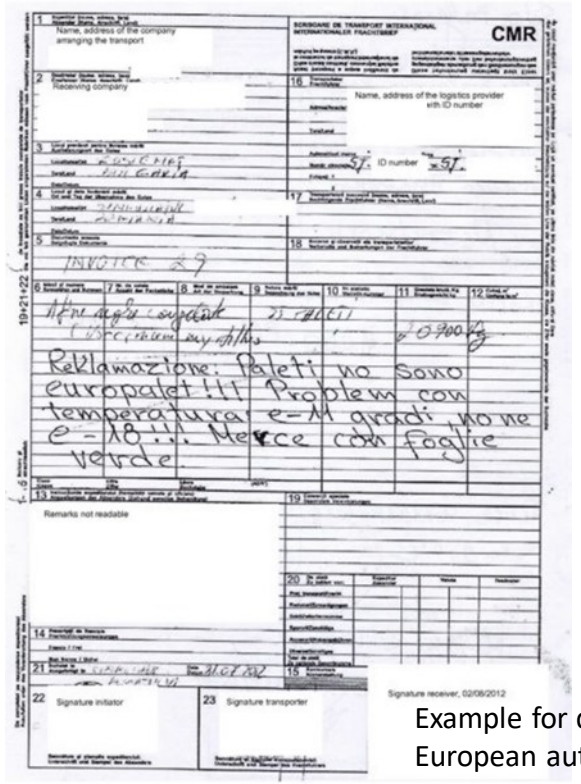
The Fipronil incident

NL collects data

DE collects data

…



Example for data exchanged between European authorities

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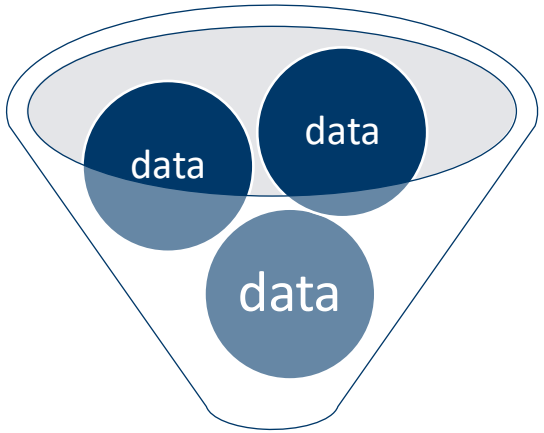
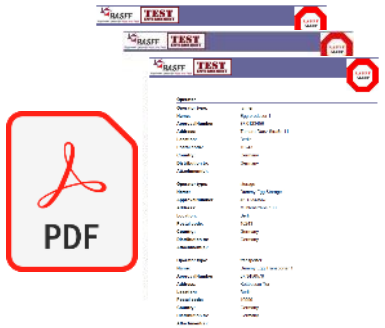
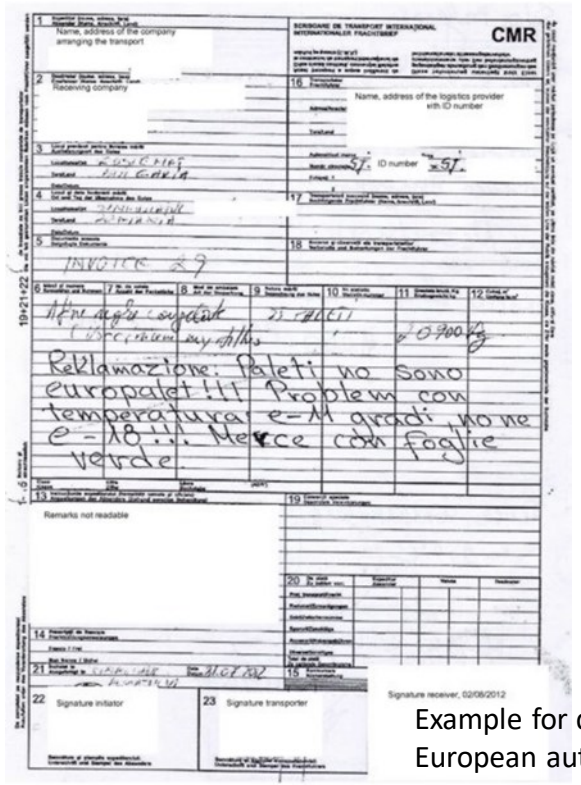


RASFF system





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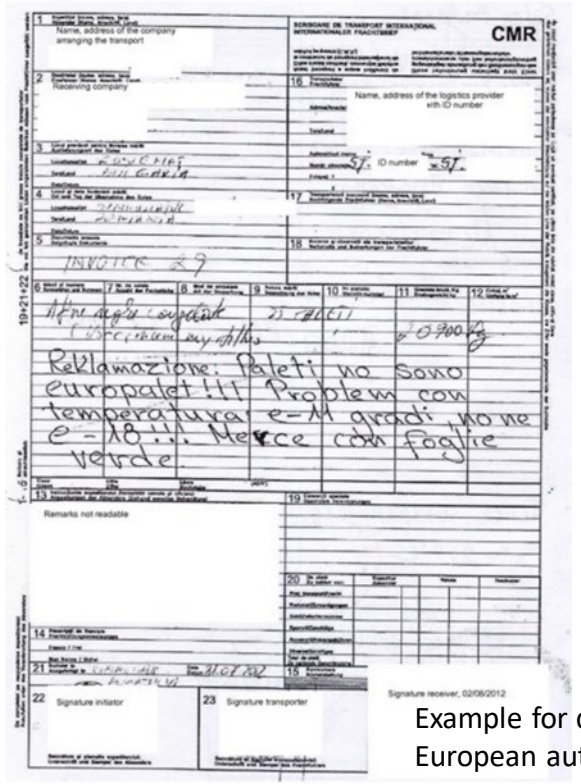

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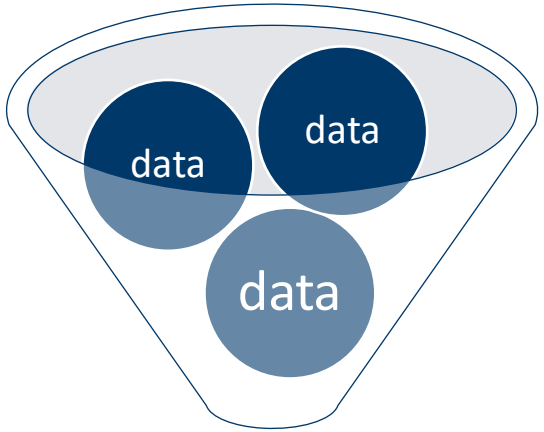

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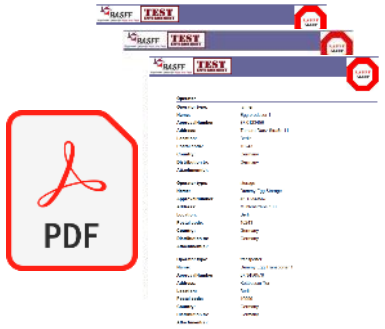


NL extracts data manually

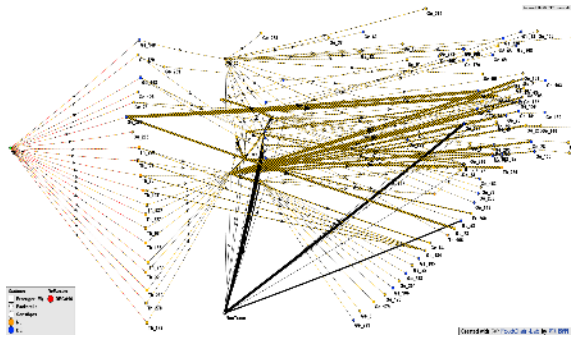
DE (BVL + BfR) extracts data manually

NRW extracts data manually

Duplication of work!

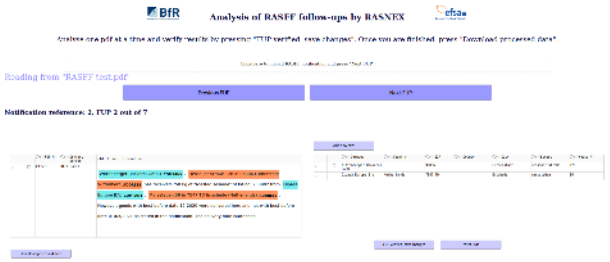
The challenge: Getting an overview on situation

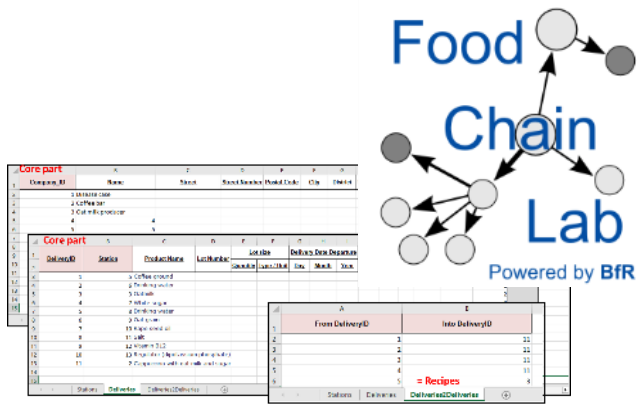
Unstructured data, not machine-readable/paper-based, distributed across several follow-up notifications → limited usability of data



EFSA-BfR cooperation on digital traceability

Analysis of RASFF follow-ups by RASNEX





(Co-)Development of interoperable software tools and harmonized data structures

UTX file

Universal Traceability data eXchange format

efsa

Decentralized Data Collection

Decentralized data collection tool for tracing food and feed

ATAST Advanced Trace And Solve Tool

efsa EUROPEAN FOOD SAFETY AUTHORITY

BfR

Structured excel templates as a first step

Excel spread sheet: FCL All-in-one template

- **Minimal extend** of data needed for successful visualization

- To collect data of whole incident in one file (e.g. for data extraction)
- Available for FCL Web + FCL Desktop!

Food Chain Lab
Powered by BfR

Core part / **Flexible part**

	A	B	C	D	E	F	G	H	I	J	M	N
1	Company_ID	Name	Street	Street Number	Postal Code	City	District	State	Country	Type of business	Latitude	Longitude
2	1	Disease case							DE	Disease case		
3	2	Coffee bar							DE	Coffee bar		
4	3	Oat milk producer							DE	Oat milk producer		
5	4	4										
6	5	5										

Core part / **Flexible part**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	DeliveryID	Station	Product Name	Lot Number	Lot size		Delivery Date Departure			Delivery Date Arrival			Unit weigt/vol./pck.		Recipient	Additional Fields ->	Item Number
2					Quantity	Type / Unit	Day	Month	Year	Day	Month	Year	Quantity	Type / Unit			
3	1	5	Coffee ground												2		
4	2	6	Drinking water												2		
5	3	3	Oatmilk												2		
6	4	7	White sugar														
7	5	8	Drinking water														
8	6	9	Oat grain														
9	7	10	Rape seed oil														
10	8	11	Salt														
11	9	12	Vitamin B12														
12	10	13	Regulator (dipotassium phosphate)														
13	11	2	Cappuccino with oat milk and sugar														
14																	
15																	

Stations | Deliveries | Deliveries2Deliveries

	A	B
1	From DeliveryID	Into DeliveryID
2	1	11
3	2	11
4	3	11
5	4	11
6	5	3

= Recipes

Stations | Deliveries | Deliveries2Deliveries

Structured excel templates as a first step

Excel spread sheet: FCL backward + forward tracing template

- For **stepwise data collection** e.g. done by inspectors on-site
- Only in FCL Desktop

Inquired Company:	Bakersfield Bakery	[Address]	DE	Manufacturer

For questions please contact the FoodRisk-Labs team, +49 (30) 18412-4444, foodrisklabs@bfr.bund.de

Outgoing Goods

	Product		Lot Information		Delivery				Recipient				Comments
	Name	EAN	Lot Number	Best Before Date or Use-by Date	Delivery Date Day	Month	Year	Amount (e.g. 45 kg)	Name	Address (e.g. Street, ZIP City)	Country	Type of Business	
	Summer Cake		SC01		6	11	2017	1 Piece	Patient01		DE	Patient	
	Summer Cake		SC02		6	11	2017	1 Piece	Patient02		DE	Patient	
	Summer Cake		SC03		6	11	2017	1 Piece	Patient03		DE	Patient	
	Summer Cake		SC04		6	11	2017	1 Piece	Patient04		DE	Patient	
	Summer Cake		SC05		6	11	2017	1 Piece	Patient05		DE	Patient	

Information to complete the sheet:

Fill in outgoing goods which are already known (see grey fields above).
Please keep track of the ingredients of all sent products - do it in a lot-based manner.
In Column A starting with Line Number 22 please enter the line number of the outgoing good being the product of this ingredient. Afterwards, enter the ingredient information in columns B
Please repeat the outgoing good as often as necessary in order to capture all its ingredients.

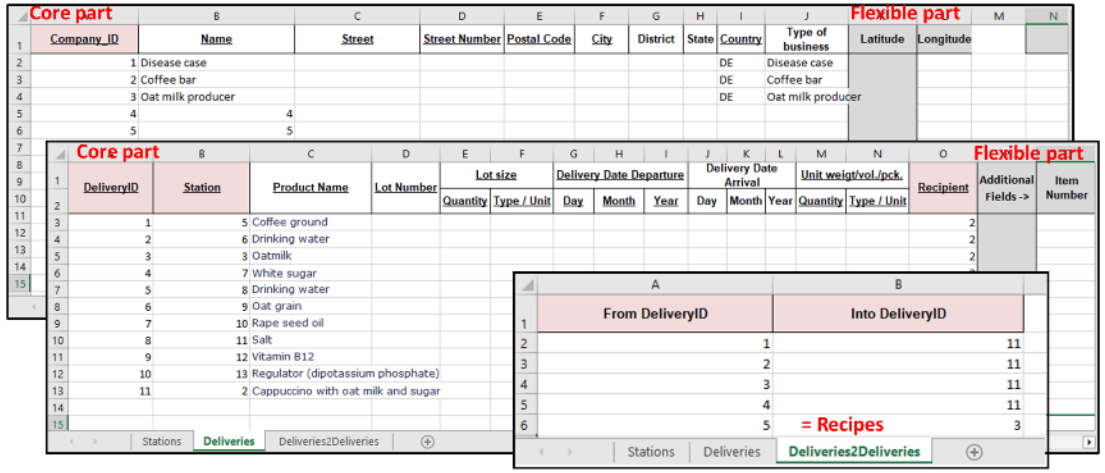
Incoming Goods - lot-based Ingredient List

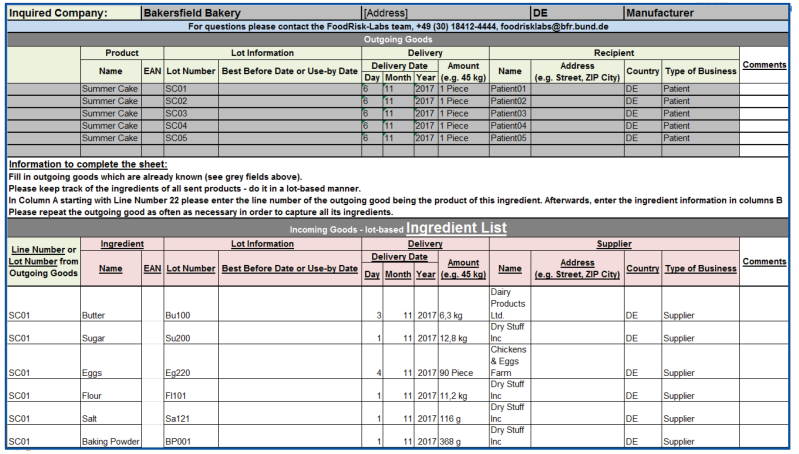
Line Number or Lot Number from Outgoing Goods	Ingredient		Lot Information		Delivery				Supplier				Comments
	Name	EAN	Lot Number	Best Before Date or Use-by Date	Delivery Date Day	Month	Year	Amount (e.g. 45 kg)	Name	Address (e.g. Street, ZIP City)	Country	Type of Business	
SC01	Butter		Bu100		3	11	2017	6,3 kg	Dairy Products Ltd.		DE	Supplier	
SC01	Sugar		Su200		1	11	2017	12,8 kg	Dry Stuff Inc		DE	Supplier	
SC01	Eggs		Eg220		4	11	2017	90 Piece	Chickens & Eggs Farm		DE	Supplier	
SC01	Flour		Fl101		1	11	2017	11,2 kg	Dry Stuff Inc		DE	Supplier	
SC01	Salt		Sa121		1	11	2017	116 g	Dry Stuff Inc		DE	Supplier	
SC01	Baking Powder		BP001		1	11	2017	368 g	Dry Stuff Inc		DE	Supplier	

Structured excel templates as a first step

- Ready to use
- Easy to use and easily accessible
- Machine-readable
- Structured but not much standardised

- Tested and applied in real foodborne incidents



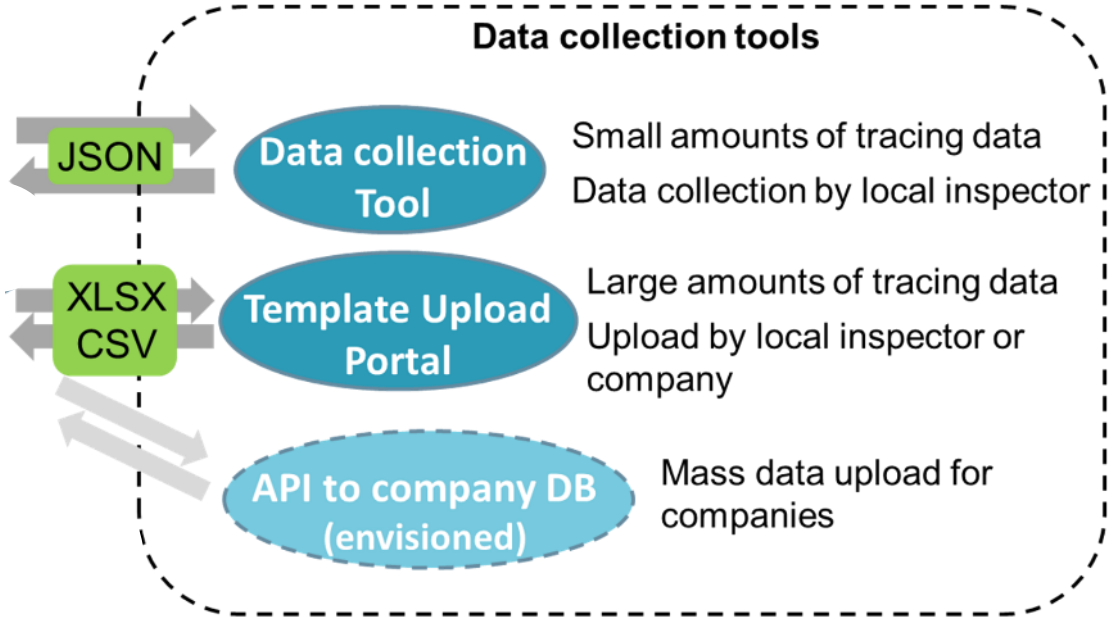


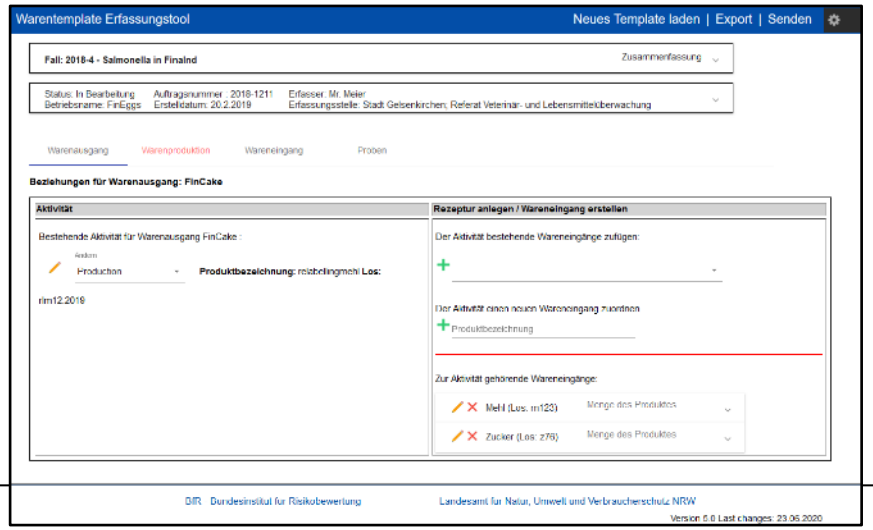
Powerful, web-based tools at local level: the ATAST system

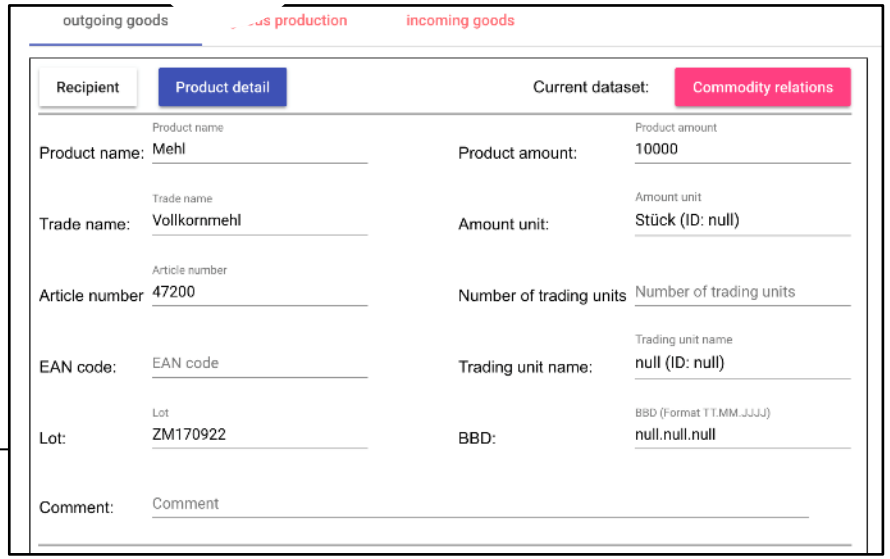
@ local authority

- Intuitive, easy-to-use, web-based software tool
- Tailor-made for varying actors and purposes (data collection tool, template upload portal, interface)
- Guided and structured data collection
- Plausibility checks
- Interfaces to registers and catalogs with curated data
- Interfaces to industry databases + RASFF system are envisioned

→ Improved data quality and speed of data acquisition







The UTX portal: Data Extraction tool within the r4eu platform

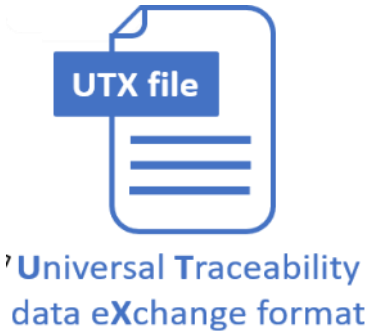
Data extraction from e.g. RASFF notifications

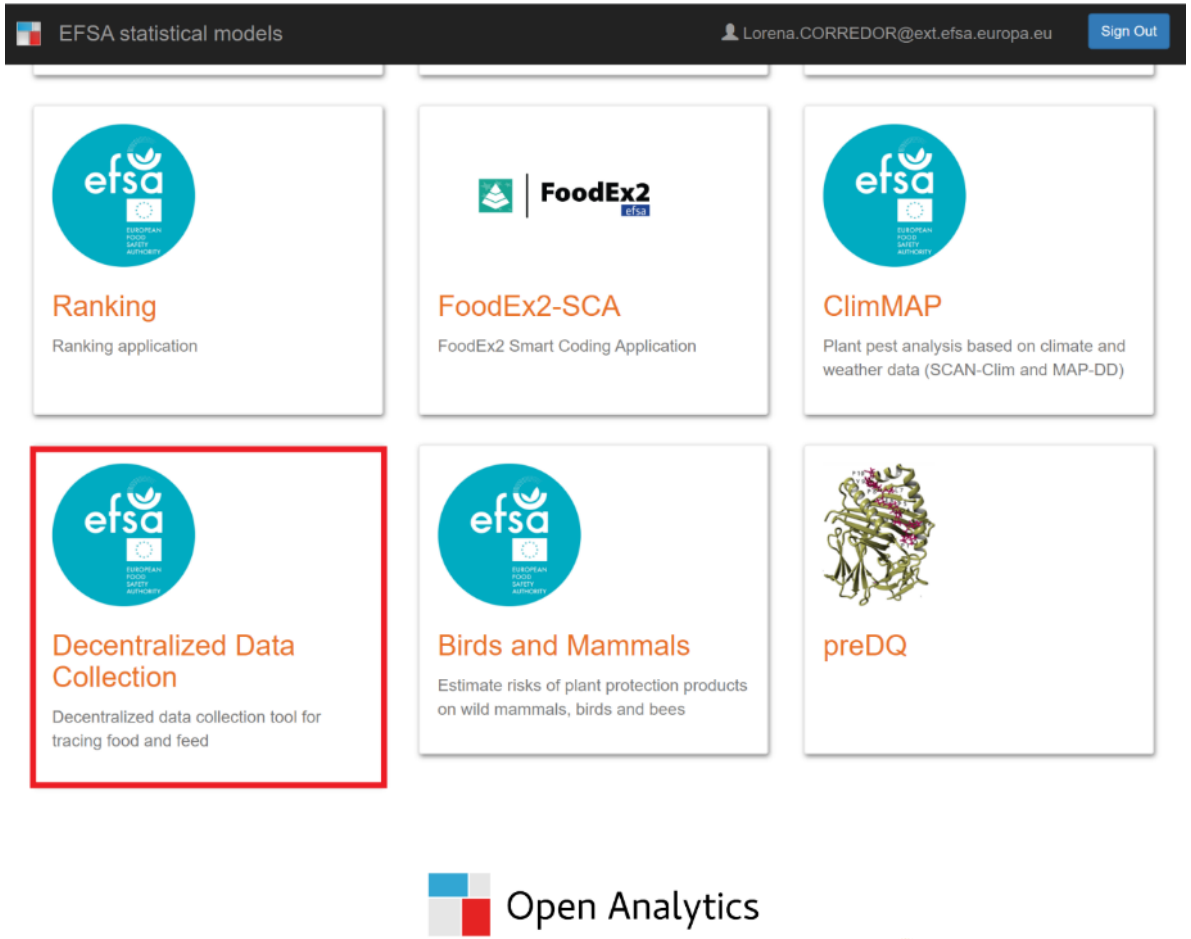
Users: MSs and EFSA

The tool:

will write and read **“Universal Traceability data eXchange” (UTX)** format to make data extraction **interoperable**

will be able to **directly interchange with FCL software via UTX,** enabling EFSA to perform rapid analyses to identify the source of contamination; incl. full documentation.





The UTX portal: Principles

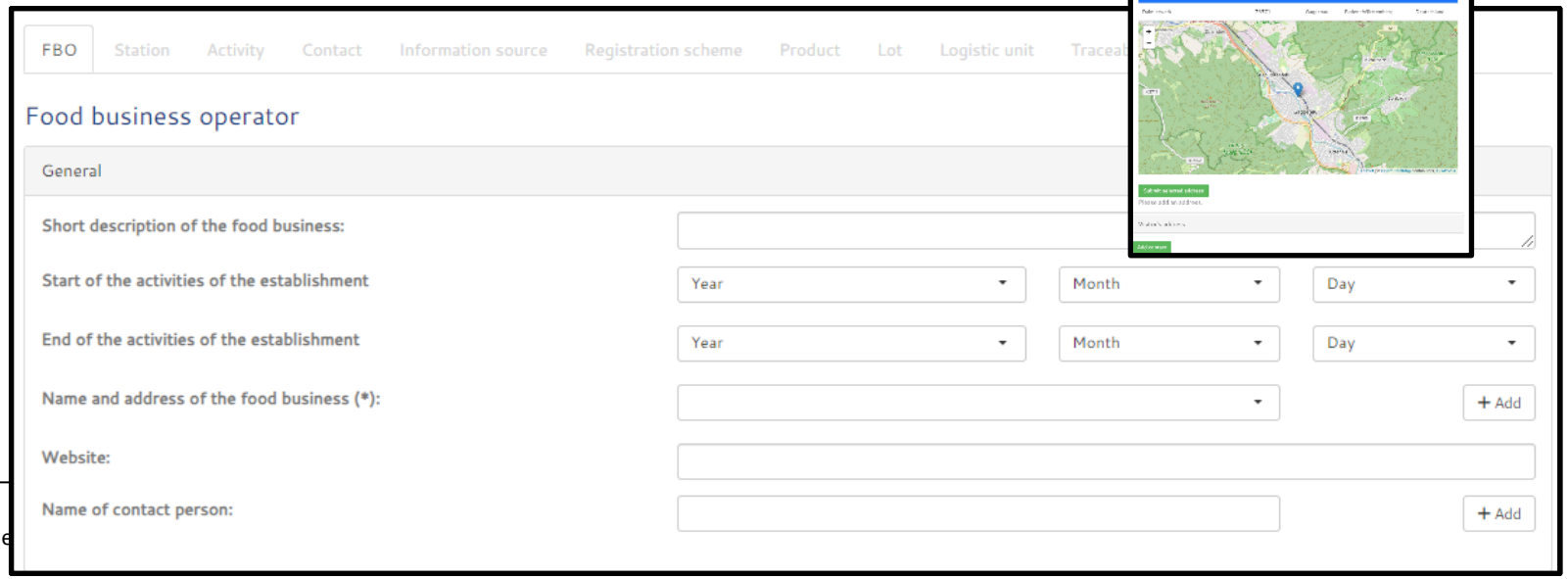
Designed for a structured and guided data extraction

Universal: Ready for all food & feed chains, based on UTX data format

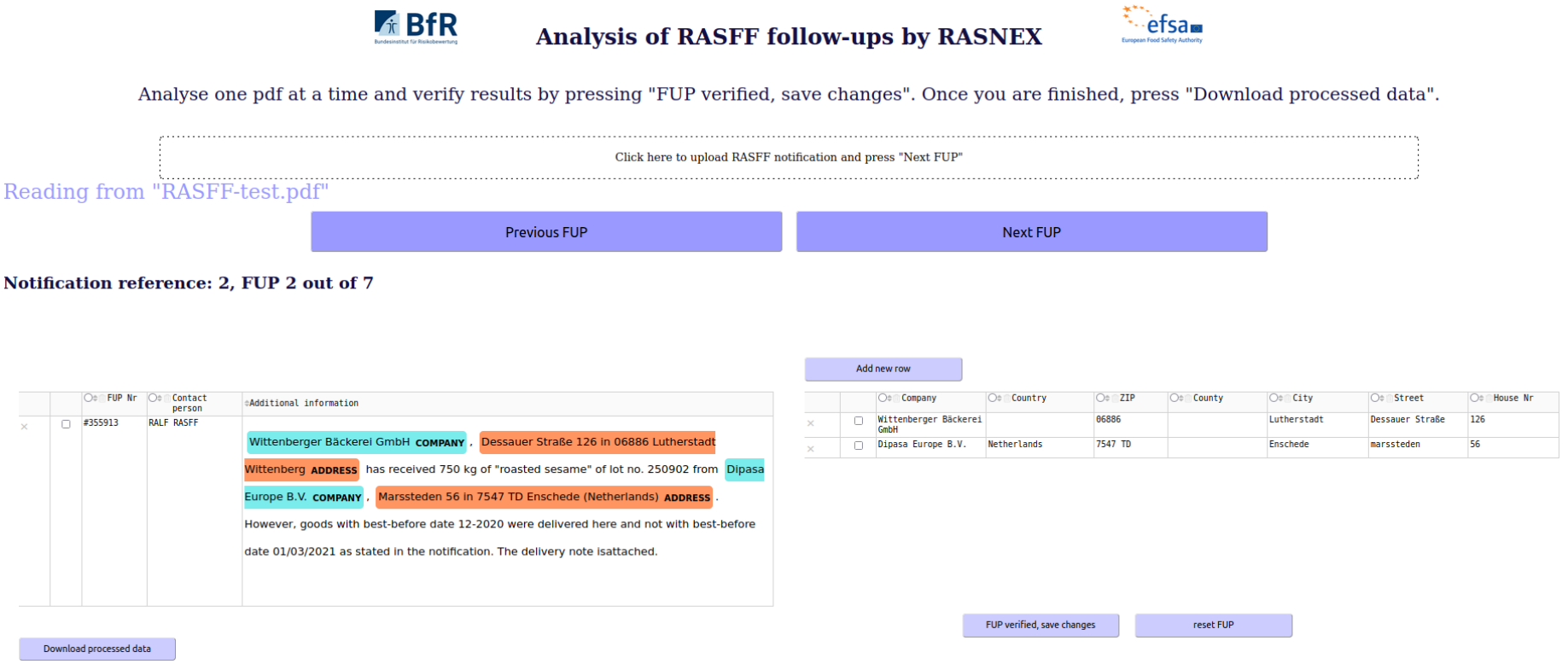
Output is harmonized data in UTX format

Transparency: Information source needed + history to track changes

Supporting functions:
- Look-up of addresses
- selection list for e.g. information sources already entered
- use of controlled vocabulary/catalogues



AI-based tools to automatize data extraction



Conclusion – What do we need?

Data:

- Structured
- Harmonized/standardized
- High quality
- Interoperable
- Digital + machine readable

Digital tools for data collection/extraction:

- Easy to use
- Accessible
- Fast
- Access to curated data
- Interoperable

Some tools are ready to use, some are on the way → we just need the courage and some effort (+ training) to start using them

"Progress is impossible without change […]" ***George Bernard Shaw***

Thank you for your attention!

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BfR
German Federal Institute for Risk Assessment

EFSA-BfR tracing team

BfR: Marion Gottschald, Alexander Falenski, Matthew Salewski, Daria Savvateeva, Marc Lorenzen, Latife Salih, Marco Rügen, not in picture: Arne Zerndt + Hanna Hauck

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