



# THE BELGIAN VIRTUAL TUMOURBANK

## A tool for translational cancer research

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### The Belgian Cancer Plan & virtual tumourbank initiative

In 2007 the first Belgian biobank network was created gathering together oncologists and pathologists from five university hospitals. This first consortium evaluated the biobanking situation in the participating institutions and adopted the model of a virtual tumourbank, to be managed by the Belgian Cancer Registry (BCR). The first objective was to extend this biobank project to all the major Belgian university hospitals.

In March 2008 initiative 27 of the Belgian Cancer Plan was launched and the subsequent royal decree of September 20th 2009 indicated the conditions for hospitals to be financed in this initiative. This led to an extension of the network to eleven biobanks in the course of 2010. Each of these 11 biobanks receives a structural financing of 300,000 euro a year for their tumourbank activities and the setup of a virtual tumourbank.

In April 2011 the conceptual design of the initiative and the use of medical data for this objective was authorized by the Belgian commission for the protection of privacy. In October 2011 this commission also approved the use of the social security number as a unique patient identification number for this initiative.



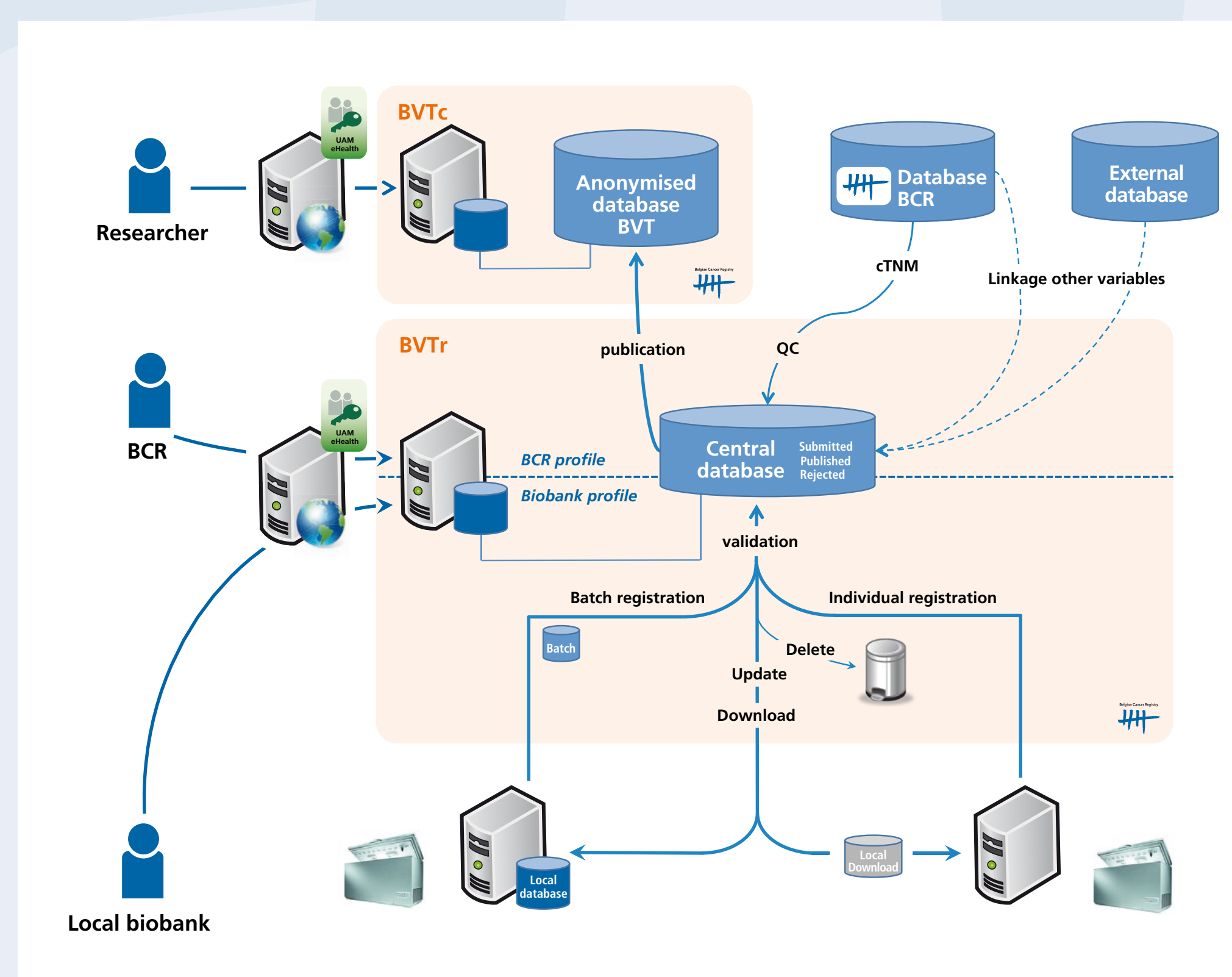
### Dataflow in the virtual tumourbank

The dataflow assumes the presence of 3 different databases and datasets.

1. The first database is the **local database** of every single local biobank. Data from this database are sent to the central database.
2. The **central database** is the database used by the BCR to centralize the data, publish data in the anonymised database, perform quality controls and add cTNM values.
3. The **anonymised database** is extracted from the central database, after removal of all the identifying variables (i.e. SSIN number, biopsy number and birth date).

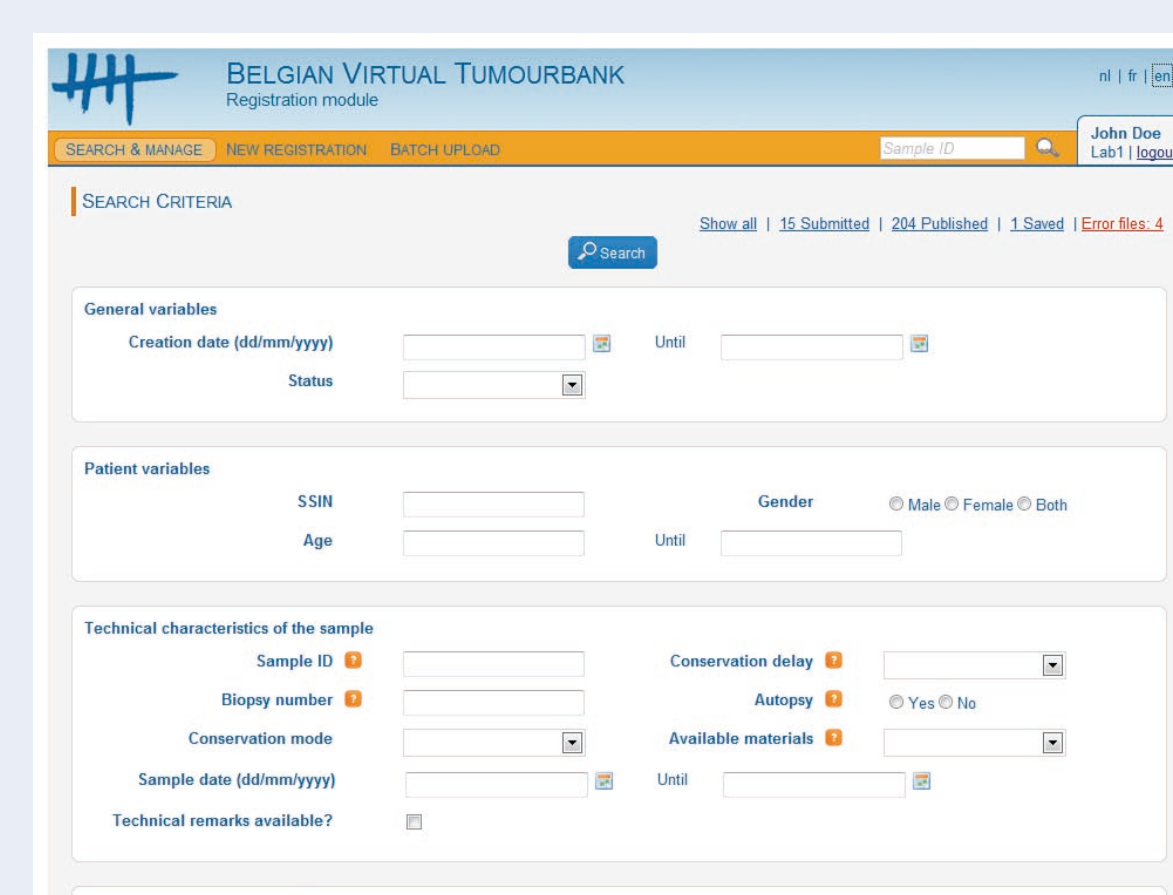
Three steps are necessary to allow cancer researchers to trace tumour samples to the tumourbanks involved in the project:

1. Local biobanks (or tumourbanks) need to register data regarding the tumour samples - which are stored locally - in a central database.
2. The BCR needs to process these data and publish the data in the anonymised database of the Belgian virtual tumourbank.
3. Researchers need to query the (anonymised) database of the Belgian virtual tumourbank via the catalogue of the Belgian virtual tumourbank. Once the researcher has found the samples he's interested in, he can trace the samples and contact the local biobanks involved.



	Local database	Central database	Anonymised database
Source		Laboratory	Laboratory
		Creation date	Creation date
Patient	SSIN	SSIN	Reference ID
	Gender	Gender	Reference ID
	Birth date	Birth date	
		Age	Age
Technical	Sample ID	Sample ID	Sample ID
	Biopsy number	Biopsy number	
	Sample date	Sample date	Sample year
	Conservation mode	Conservation mode	Conservation mode
	Conservation delay	Conservation delay	Conservation delay
	Origin of the sample	Origin of the sample	Origin of the sample
	Available materials	Available materials	Available materials
	Technical remarks	Technical remarks	
Oncological	Sample type	Sample type	Sample type
	Sample localization	Sample localization	Sample localization
	Laterality	Laterality	Laterality
	Morphology	Morphology	Morphology
	Degree of differentiation	Degree of differentiation	Degree of differentiation
	pTNM	pTNM	pTNM
	Oncological remarks	Oncological remarks	
Other			
BCR		cTNM	cTNM

### The online applications BVTr and BVTc



For the purpose of the Belgian virtual tumourbank the BCR developed an online web application. This application consists of 2 modules, a registration module called BVTr (Belgian Virtual Tumourbank - registration module) and a catalogue module called BVTc (Belgian Virtual Tumourbank - catalogue module). Both the applications can only be accessed after identification and authentication by the eHealth User and Access Management (UAM), allowing a highly secured way of managing medical data.

- **The registration module BVTr** allows both registrations from the local tumourbanks by the biobank employees and processing of data by the BCR. The profiles and access rights for the BVTr differ depending on the user (**BCR or biobank**).
- Once data are published they are available for cancer **researchers** via the **catalogue module BVTc**. The BVTc is an easy-to-use tool that allows researchers to query the (anonymised) database of the Belgian virtual tumourbank and locate the samples of their interest in the different local biobanks.

### Contact

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