Testbed Target ready for petabytes of data

The Target project (the largest public private IT project in the Netherlands) has delivered a unique testbed. This testbed can store and process 1.5 petabytes of data at the moment, and will eventually have a capacity of 10 petabytes - a quantity equal to a DVD pile of 1.81 miles (2.91 kilometres).

Target Testbed: unique processing capacity

The Target testbed consists of a large quantity of hard disks and tapes, which form one large storing-system. Disks and tapes have been located at four different locations (storage pools). The combined power of these storage pools and a state of the art network make up for a very fast processing system with a large storage capacity. This huge storage capacity makes the Target testbed unique in the world.

Target has arisen from projects in astronomy; one of these projects is ASTRON’s\(^1\) project LOFAR. LOFAR is the world’s largest radio telescope, consisting of low band antennas spread across the North-East of the Netherlands and Europe. (The largest baselines across Europe are of the order of 1500 kilometres). ASTRON will use the testbed to store the huge amount of data from these antennas in the ‘LOFAR Long Term Archive’.

An other project which will use the Target testbed is LifeLines. Researchers of LifeLines investigate how nurture and nature effect people’s health on the long term (how genes, behaviour and environment effect our health on the long term). To investigate this, 10,000 DNA samples are stored and processed. This processing is done on the Target testbed.

One of the pilots for which the new testbed will be used, is Monk. Monk is an Artificial Intelligence research project of the University of Groningen. The project collaborates with the National Archive of the Netherlands. Monk has invented a method to decipher historical handwritten texts, by means of algorithms. Furthermore, Monk makes these texts and their meaning digital available.

\(^1\) The Netherlands Institute for Radio Astronomy
For this pilot the thesis of Ubbo Emmius \(^2\) and the “Archief der Kabinet der Koningin” (national archive of the queen’s administration) will be stored, processed and annotated (web-based). The combination of Monk’s recognition algorithms, combined with Target’s computers and database engines, has a unique OCR\(^3\) performance: 600.000 pages of the queen’s archive will be processed on the testbed. The processing-speed is extremely fast: 2.500 pages a second are handled, 100 times faster than previously.

**Valorisation**
Valorisation of Target’s knowledge has been given unique focus through a newly founded private company Target Holding BV. The first valorisation projects have been initiated; two entrants have started a pilot project on the testbed. Furthermore, there are several diverse pilot project in the making; in which the Target technology is used in a broad range of (business) fields.

**The Target project: a public–private collaboration**

Target is an expertise centre of the University of Groningen, the UMCG, Astronomical centre OmegaCEN, Astron, Target Holding BC, IBM, Task24, Oracle and Heeii. Target is aimed at data storage and data management of very large amounts of (sensor)data. Prominent scientific research groups and innovative businesses jointly develop and improve complex and scalable data systems. Focus point is the Target paradigm: full integration of large-scale data processing, archiving and analysis.

The testbed is made in collaboration with the centre for Information Technology (CIT) and IBM. Scientific as well as market based commercial project are launched on the testbed.

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\(^2\) First rector magnificus of the University of Groningen

\(^3\) Optical character recognition