The 2DCoding project aims to develop general concepts for coding and signal processing of future two-dimensional data-storage technologies. The work is done in TST, in strong cooperation with the SAS group.

Future mass-storage media will consist of nanometer-sized particles ('bits'), which are positioned in a regular pattern like, for instance, a hexagonal lattice with rows and columns. The high bit packing density on the medium is giving rise to complicated 'interactions' between these data bits, manifesting themselves (2-D) in the directions of both the row's and the column's orientations (compare: patterned magnetic recording).

The emerging storage technologies will run using a newly developed type of write/read transducers, called 'probes', which are able to access the very small data bits on the medium. These probes will combine their high precision with a relative low write and read speed, and a large number of probes will be operated in parallel.

**STW project April 15, 2010-October 15, 2014**

Groups involved: Transducers Science and Technology (TST, MESA+) and Systems and Signals (SAS, CTIT)

Companies involved: ASTRON, IBM Research GmbH

People involved:
TST: Hans Groenland (assistant professor), Leon Abelmann (professor), Gijs Krijnen (professor), Laurens Alink (PhD student), Martin Siekman (technician)
SAS: Kees Slump (professor), Xiaoying Shao (postdoc, till 14 November 2013)

**Publications**

**2012**

2011

IEEE Transactions on magnetics

2007
