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*Work done / results accomplished (during the report period)*

WP3- T3.1: Features enhancement.

- Software that enhances the watermarks in grayscale images.

WP3- T3.2: Sieve feature measurements in grayscale images

- Software that measures the laid lines density and chain lines distance.
- Software that finds identical pieces of paper based on the chain lines distance. (Demo version <http://rembrandt.ewi.tudelft.nl/> ).
- Software that detects watermarks in grayscale images. (Currently improving the first software version )

WP3- T3.2: Sieve feature measurements in binary images

- At the request of OEAW and LABW we have developpd (semi-automatical) software that measures watermark height and width in the Piccard online database and Printed Piccard collection. The software has been finished. It has already been implemented at OEAW and will be installed at LABW as soon as they have a Matlab license).
- Software has been developed at the request of OEAW and LAB isolating watermarks in the Piccard online database and printed Piccard collection. It has already been implemented at OEAW and will be installed at LABW as soon as they have a Matlab license).
- The development of software that finds identical watermarks in both the printed Piccard collection and Piccard online database. The work has nearly been finished; waiting for the isolation of the watermark to be done by OEAW and LABW.

WP3- T3.2: Watermark imaging by backlight subtraction

- Software that extracts the paper structure from the reflected and transmitted image of the piece of paper.

WP 6

- Consultation with NIKI, KB and University Leiden about a Dutch exhibition about paper history and Bernstein.
  - Appointments with respect to the Dutch catalogue and the new chapters to be written.
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Person months for each Work Package:

**WP1:**        **WP2:**        **WP3:** 7        **WP4:**        **WP5:**        **WP6:** 1        **WP7:**

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Dissemination activities (papers, talks, collaborations, advertisements...)

-Paper. H. Moreu Otal, M. van Staalduinen, P. Paclik, J.C.A. van der Lubbe. *Watermark detection in x-ray images from paper for dating artworks. Proceedings SPPRA 2008, Innsbruck (Austria).*

- Explanation about how to use the software developed to isolate the watermarks in the Piccard Online database and Printed Piccard collection. In Vienna, November 2007. Demo version <http://rembrandt.ewi.tudelft.nl/>

-Various lectures for the scientific community on the authentication and dating of etchings and other art objects on paper on the basis of paper analysis.

- DUT website on paper research:

[http://ict.ewi.tudelft.nl/index.php?option=com\\_sections&id=37&Itemid=97](http://ict.ewi.tudelft.nl/index.php?option=com_sections&id=37&Itemid=97)

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Materials bought / subcontracting (only in relation to this project)

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Global evaluation in relation to the project's objectives

- Emphasis in this period was on WP3, especially focused on the watermark detection in grayscale images and watermark isolation for the Piccard database, in narrow cooperation with LABW and OEAW.

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Improvements / Proposals / Comments

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