Work done / results accomplished (during the report period)
(indicate the Work Package(s) Nr. and Task(s) Nr.)

WP2 – T2-3

a) *Geographical references for GIS* [achieved]: New geographical references have been added and identified for the following sets of data: Likhachev's watermarks album, "Piccard on line" repositories, Briquet *Les filigranes* repositories, ISTC printing places, Plague in medieval Europe database.

b) *Optimization of watermarks databases for statistical purposes* (also WP4 – T4-2) [achieved, testing in progress]: Since watermarks databases were not conceived for statistical purposes, a huge amount of data (more than 92.000 records for Piccard on Line [POL]) has been reworked to create a new database in order to be interfaced with GIS (POLfS = "Piccard on line for Statistics"). "Reworking" means: correction of wrong dates or places of paper use; normalization of data written in different forms in the existing fields; extraction and reorganization in different fields of heterogeneous data which in POL are mixed in the same field ("Bemerkungen"); creation of typological classes at different levels; expliciting of implicit information… and so on. Therefore, most fields of POL have been modified and several new fields have been added. The new database is structured as follows:

  1. *Fields already existing in POL, whose information has just been standardized.*
  2. *Fields already existing in POL, whose information has been enriched and improved, thanks to data coming from POL or from other sources.*
  3. *New fields, whose information comes from the two* Bemerkungen *fields of POL.*
  4. *New fields, whose information comes from other sources.*
  5. *New fields which create new categories using the initial data, permitting the selection (or the elimination) of homogeneous groups.*

The general purpose and all the fields of the database are listed and explained in a Word file (*Pol for statistics.doc*).

Moreover, Piccard's original cards contain a lot of data which were not recorded in POL database: information on twins, laid lines density, replicas not reproduced … All these data could be added automatically or manually to POLfS. This task is conducted primarily on "bull's head" watermarks (over 25000 "bull's head" are reproduced in POL); see below.

The POLfS data have been harmonized in order to be assembled in a unique complete database of watermarks for statistical purpose (**DHP** = Database for History of Paper), including Briquet, WILC, WZMA and other databases or repertories printed and/or available on the Web (for other databases see below, WP4 – T4-1 and T4-2, d). This task could be processed and achieved if the new "BernsteinPlus" project was financed by UE.

c) *Classification of POL "bull's head"* [in progress]: The "paths" used for searching watermarks in the databases are not useful for paper historians, because the result of a query is always a mixture of heterogeneous papers (i.e. sheets of paper which do not come from the same region or paper mill, or which were not transported on the same trade roads and were not available on the same market). The only manner to

avoid this "disaster" consists in creating manually several homogeneous groups based on the close morphological similarity of the watermarks concerned. This works fine, but it is a very long and expensive job when applied to the over 25.000 "bull's heads" available in POL. First, it is necessary to identify all reproductions of the same watermark (this happens frequently in "bull's head" motif), then to group all watermarks according to their degree of similarity. Since the comparisons can be made only by superposing the image of each watermark to many other watermarks, this may take a long time. Over 5.000 "bull's head" have been compared, identified and classified so far.

WP4 – T4-1 and T4-2
a) *Paper-Incunabula integration* [achieved]: In Briquet's *Les filigranes* over 700 references come from 400 printed books. Of these, 235 belong to incunabula which are now identified by ISTC number.

b) *Authors in incunabula* [in progress]: More than 3.500 authors are represented in about 28.000 editions printed in the XVth century. The most relevant biographical data concerning their works are collected in a specific database which will be linked to the main incunabula database and GIS.

c) *Other databases included in GIS: a "plague" database* [achieved]: The capacities of GIS will be largely increased if the software comes with its own data, the majority of which consist of situations or events related to book history or paper history. Plague was an endemic calamity which heavily perturbed all activities in European countries, especially the production of paper and books. The creation of a database including a complete geo-chronological list of plague epidemics (1348-1600) has been achieved and the geographical references have been introduced in GIS.

d) *Recording other watermarks albums*
   Mazzoldi, *Filigrane di cartiere bresciane* (1.036 watermarks, achieved). This album of watermarks is very important for the history of paper, because the paper made in the region of the Lake of Garda was used in all Venitian incunabula and was exported in many european countries (Balkans, Austria, Germany, Poland...). This database enables us to recognize the provenance of the paper used in chanceries and printing workshops and therefore to evaluate the structure of the market in the main cities of Europe.

Person months for each Work Package:

WP1: 0,6   **WP2**: 20   **WP3**: 2,1   **WP4**: 20   **WP5**: 0   **WP6**: 0,2

WP7: 0

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

- .

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

- .

Global evaluation in relation to the project's objectives

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Improvements / Proposals / Comments

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