



THE INSTITUTE OF PAPER CHEMISTRY, APPLETON, WISCONSIN

STATUS REPORT

To The
Project Advisory Committee
Systems Analysis

October 24-25, 1985
The Institute of Paper Chemistry
Continuing Education Center
Appleton, Wisconsin



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PRELIMINARY AGENDA

Systems Analysis Project Advisory Committee Meeting

Thursday, October 24, 1985

The Institute of Paper Chemistry
Continuing Education Center

The fall meetings of the Project Advisory Committees are open to members of the Institute. Thus, a brief review of the project will be presented before discussing the current status and proposals for future work.

1:00 - 5:00 p.m.

- I. Overview of MAPPS

- II. Status Review of MAPPS
 - A. Version 2.0
 - B. Sales
 - C. Support

- III. Users Group
 - A. Bulletin board
 - B. Users Group activities

- IV. Marketing Activities

- V. Future Work
 - A. Module development
 - B. Physical properties
 - C. Quality modelling
 - D. Other work

5:00 - 6:30 p.m.

Cocktails and Dinner

PRELIMINARY AGENDA (Continued)

System Analysis Project Advisory Committee Meeting

Friday, October 25, 1985

7:00 a.m. - Breakfast (CEC Dining Room)

8:00 - 10:00 a.m. - Committee Meeting (Krannert Building - Rooms 108-109)

In this closed session of the committee, we would like to discuss the issues raised in the "Future Work" section of Thursday's presentation. The following are the major issues:

I. Future Modules

- A. Do we have the correct set?
- B. What should be the relative priority of development?
- C. What should be the relative level of detail involved?

II. Physical Properties

- A. Relative priority of physical property work
- B. Attributes most necessary to make MAPPS viable

III. Quality Modelling

- A. Approaches to pulp quality modelling
- B. Approaches to paper quality modelling

IV. Other Work

- A. Importance of optimization
- B. Importance of data reconciliation/process identification

Next Meeting Date: March 19-20, 1986

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

Status Report

to the

SYSTEMS ANALYSIS

PROJECT ADVISORY COMMITTEE

Project 3471

PROCESS MODELLING AND SIMULATION

September 20, 1985

PROJECT SUMMARY FORM

DATE: September 20, 1985

PROJECT NO. 3471 - Process Modelling and Simulation

PROJECT LEADER: P. Parker

IPC GOAL:

To develop and support a marketable computer modelling capability to cover the full spectrum of mill types and problems of interest to Institute staff and member companies.

OBJECTIVE:

To develop and support the MAPPS simulation package.

CURRENT FISCAL BUDGET: \$200,000

SUMMARY OF RESULTS SINCE LAST REPORT: (February, 1985 - August, 1985)

Version 2.0 of MAPPS was released in early September. This new version was supplied to all users of MAPPS except academic organizations which receive no support services.

Models for the chlorination tower, alkali extraction tower, and chlorine dioxide tower were included in the new version. If desired, users may also obtain these models for Version 1.0.

Three papers describing MAPPS were presented at various symposia. These papers should appear in the published literature in 1986.

Four additional copies of MAPPS have been sold, three of them to universities with pulp and paper programs or pulp and paper options within chemical engineering programs.

STATUS

The effort of the MAPPS group has been expended in three major areas since the last Project Advisory Committee meeting:

Version 2.0 of MAPPS

Customer Support

Sales

Each of these areas is discussed below.

In addition to these major areas, we have initiated work on the prediction of product quality from processing conditions, the expansion of the physical property database to include electrolyte properties, and the development of new bleaching modules. Work in these areas has not progressed sufficiently to warrant a written report at this time, although our efforts will be discussed at the meeting.

VERSION 2.0

Version 2.0 was shipped in mid-September. This version contains several extensions to the executive and includes the new bleach plant modules. The Programmer's Guide was completely rewritten, the User's Guide was extensively modified, and minor changes were made to the Model Documentation and Module Documentation manuals.

Version 1.0 of MAPPS contained "prompt" and "no prompt" modes of operations. The prompt mode helped the user construct editor commands, while the no prompt mode expected the user to give a correct, complete command at the prompt sign. The prompt mode had to be deleted when MAPPS was modified to run on microcomputers. Version 2.0 restores the ability to obtain help about MAPPS

commands. Help is available at any time by requesting "HELP" (to get information on all the commands) or "HELP <command>" (to get information on a specific command).

Version 2.0 also implements a set of commands for file manipulation, as requested by our users. The user now has essentially complete control over the naming, use and reuse, and deletion of MAPPS data files while executing MAPPS. In addition to these commands, device numbers and default file names are loaded from an external data file at MAPPS initiation, so these can also be easily changed by the user.

The three bleaching modules (chlorination, alkali extraction, and chlorine dioxide) are included in Version 2.0, as are the report writer and the direct steam heater. With the addition of these modules, MAPPS can now simulate a completely integrated bleached kraft mill.

CUSTOMER SUPPORT

Customer support has required about the expected level of effort. Several clients have requested significant support as they have pushed MAPPS near its limits (and in some cases, beyond those limits). Other clients have requested only minimal support.

The bulletin board has been established as a customer support tool. Messages and corrections have been transmitted via the bulletin board. Ron Mann of James River Corporation is using it extensively to solicit ideas for the MAPPS Users Group. As more users become familiar with its operations, we believe this will be a valuable support tool.

SALES

Several new copies of MAPPS have been sold. We have experienced increased interest by the academic community and now have MAPPS packages at:

State University of New York at Syracuse

Auburn University

Georgia Institute of Technology

University of South Florida

Universtiy of Maine

Several other schools, including Oregon State University, Western Michigan, and Universtiy of Wisconsin at Stevens Point, have expressed strong interest, and we expect several of them to purchase copies.

Three major companies have given us evidence of their intent to purchase MAPPS, and we hope to report the finalization of these sales by the time of the October meeting.

USERS GROUP

The second meeting of the MAPPS Users Group is scheduled to coincide with the October PAC meeting. Ron Mann of James River Corporation is developing the agenda for the meeting. The format of the meeting will be much the same as the previous meeting, although no joint PAC/Users Group meeting is planned.

FUTURE WORK

The expansion of the process operations included in MAPPS is a primary goal of the MAPPS effort. In the near future the following process operations will be addressed:

Oxygen Bleaching (incorporation into MAPPS of Greg Kulas' work)

Oxidative Extraction

Single Effect Evaporator

We hope to develop and add the appropriate modules within the next three to six months.

We are also developing a list of unit operations that should be included in MAPPS and will be prepared to discuss this list and our priority ranking of the list at the meeting.

The modelling of product quality is an important issue and one that draws upon the many resources of the Institute. As mentioned above, we are developing a plan of attack for this area. Currently, no definite plans have been formulated, and we will share our thoughts with you in October.