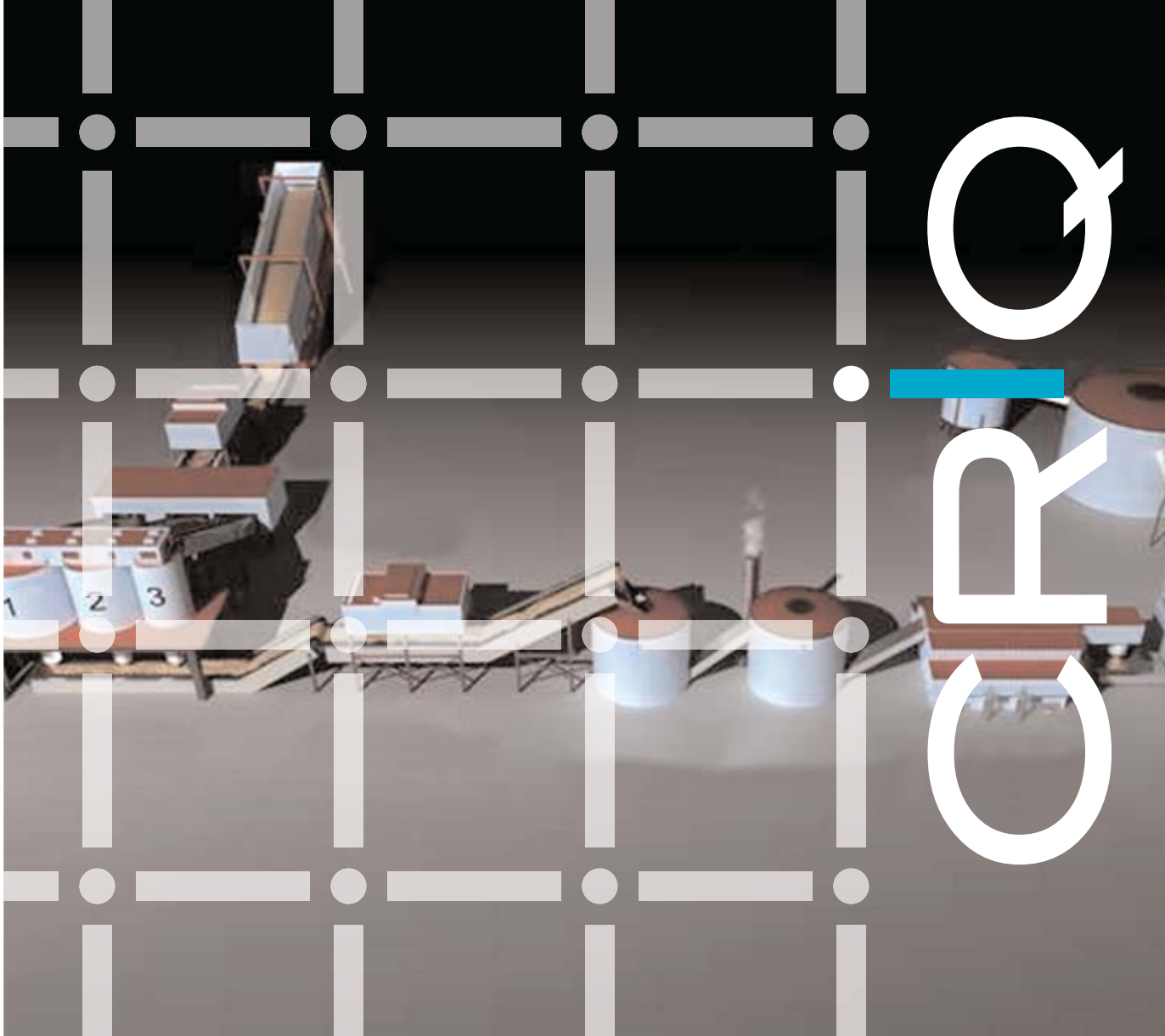


# OPERA



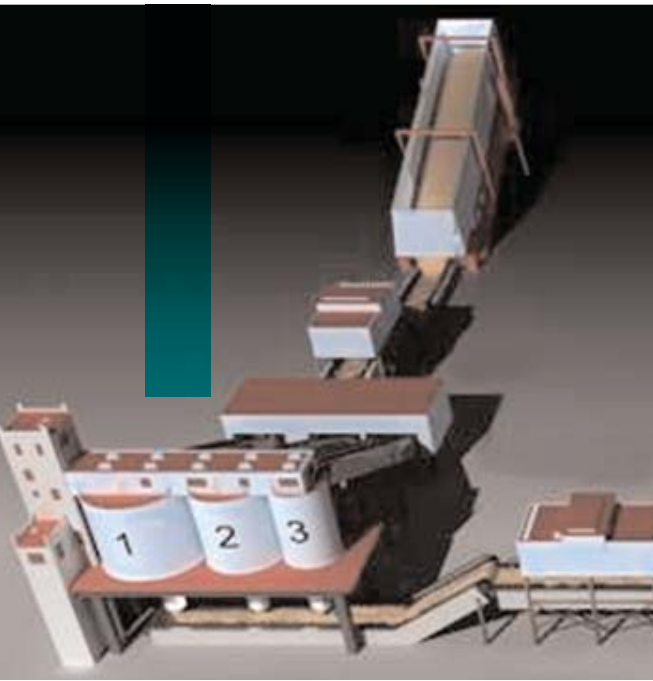
## Refinery energy optimization technology

OPERA (refinery energy optimization) aims to reduce energy costs required by pulp and paper plants in the refining process step. The complete optimization solution require five different steps:

- Stabilization of inflow;
- Refiner feed control;
- Pulp quality prediction;
- Optimal and predictable ordering;
- The expert system.

# OPERA

## Refinery energy optimization technology



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### RETURN ON INVESTMENT AND DIRECT BENEFITS

For a TMP plant producing 1000 tons of pulp per day, the annual return on investment is estimated at \$900,000 in savings, only by reducing the refining energy.

The system will also help to:

- improve the quality of delivered products;
- stabilize the process;
- reduce waste;
- increase CSF target for the same pulp quality.

### MAIN APPLICATIONS

OPERA is presently used at pulp and paper plants operating with a TMP process.

The application could easily be adapted for the following applications:

- MDF and HDF panel boards;
- OSB and particle board.

In order to be able to analyze the process data as well as identify and quantify the latter, the CRIQ has designed an analysis unit to extract and analyze historical plant data. This utility is relatively generic and can be employed in diverse fields of operation.

#### For advice or information on OPERA technologies:

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