

## > Applications in paper mills

### > When and why ?

- Predictive maintenance of the paper machines (PM)
- Manufacturing faults
- Press profile monitoring
- Paper speed increase
- Vibration of the structures

### > The results

- Assessment of the PM bearings before stoppage
- Diagnosis of the sectionals
- Diagnosis of the coating defects
- Analysis of the dynamic behaviour
- Diagnosis and considering solutions



### > Predictive maintenance of the equipment

- Diagnosis of the state of the PM and dryer bearings before stoppage
- Monitoring the state of the cardans
- Health check on the ancillaries : pulpers, scrubbers ...
- SOS diagnoses in the event of malfunction

### > Vibratory and electrical diagnoses

- Assessment of electromechanical state
- Diagnosis of mechanical and electrical faults
- Periodic analysis of the motor currents

### > Manufacturing fault diagnosis

- Analysis of the paper weight fluctuations seeking
- Diagnosis of the press coating defects
- Seeking regulation faults

### > Turnkey protection and monitoring solutions

- Machine protection and monitoring system
- Sensor instrumentation at inaccessible points
- Specific instrumentation surveys
- Consultancy, assistance and remote diagnosis

### > Assistance for projects

- Forecast study of the dynamic behaviour during paper speed increases: headbox, dryer frame...
- Definition of the adapted monitoring system

### > Assistance and formation

- Specific PM training course in Dynae training catalogue
- Intra-company training courses
- Consultancy work to optimise predictive maintenance

#### DYNÆ

- > Vibratory analysis
- > Electrical analysis
- > Infrared thermography
- > Instrumentation and sensors
- > Software
- > Training



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> **Vibratory diagnosis**

International Paper – Saillat	Analysis and diagnosis contract covering all the machines	Since 2002
Etienne Papermill (IP) Arles	Monitoring PM 1 and 3	Until 2010
Smurfit FPR – Avignon	Monitoring PM avant arrêts	Since 1990
Rhin Papermill – Mulhouse	Monitoring PM before stoppages	Since 2003
Cran Papermill	Monitoring PM before stoppages	2004 to 2006
Alsthom – Pont Evêque	Expert survey on PM	2000 to 2005
Condat Papermill	Vibratory monitoring contract covering all the machines	Since 2015
Cascade Papermill – La Rochette	Assessments on PM 2 and 3	2006 to 2008



> **Manufacturing fault diagnosis**

International Paper	Diagnosis of the faceting of the Kuster 3 press	2000
Emin Leydier Papermill- St-Vallier	Banding phenomenon expert survey	2002
Smurfit - Uzerche	Faceting analysis press section 3	2004
Smurfit Munksjo Paper	Seeking the causes of barring	2004
Etienne Papermill - Arles	Analysis of the causes of barring PM 3	2004
Smurfit - Saillat	Analysis of the rollers problems	2005
Smurfit - Navarra (Spain)	Analysis of the causes of barring	2005

