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Coordinator **ACTIA**

FMS : Food industry demands – Dairy sector - Interviews

- Actilait performed 12 interviews (trying to cover different areas of the dairy sector) :
 - 5 suppliers of the dairy sector (equipment x2, cleaning products x2, sensors x1).
 - 5 cheese factories (processed cheese, soft cheese, hard cheese, cream, butter, "traditional" and "industrial" cheeses)
 - 2 powder factories (whey and milk powder)

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FMS : Dairy sector - main needs identified

- **Cleaning efficiency:**
 - For all questioned cheese factories, cleaning operations are a area for improvements and where microsystems can find applications. We can hope environmental and productivity improvement but they need tools to measure the cleaning efficiency and to use the good quantity of cleaning products and the good cleaning time.
 - Technical constraints: measure of the microbiological load and of fouling up. Must be in link with CIP automatism.
 - Other problem identified :
 - the monitoring of the persistence of cleaning products (like enzymatic detergents).
 - The monitoring of the development of biofilms.

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FMS : Dairy sector - main needs identified

- **Surface status and monitoring of materials ageing:**
 - Qualification and quantification of interactions materials / cleaning products.
 - Sensitivity of surfaces to the development of biofilms.
 - monitoring of the mechanical properties of a material (for example the porosity of mold and the capacity to evacuate the whey)

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FMS : Dairy sector - main needs identified

- Fast microbiological analysis (<24 hours) or online
 - Specification of some protected designation of origin cheeses requires a rapid processing of milk, before results of classical microbiological analysis.
 - Important for cheese manufacturing with raw milk
 - Concerns essentially *Salmonella* and *Listeria monocytogenes*
- Monitoring continuously the contamination of milk, whey (and environment) in bacteria viruses.

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WP3 Dairy sector : main needs identified

- Sensors for process optimization (or how the product can drive the process ?)
 - This topic concerns a lot of descriptors in dairy sector. Few examples described in interviews.
 - Dry matter and monitoring of the drainage in curd and cheese
 - Whey protein and denaturation rate in link with cheese yield
 - Salt intake
 - Volatile organic compounds (ripening)
 - Opening characteristics (ripening)
 - Fermentation activities (lactates, volatile fatty acids)
 - The objective is to replace classical analysis (with a cost and a delay) by a sensor able to perform the analysis continuously and to pilot the process.

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Thank you
for your attention!