

## Automated optical inspection for electronics printed on paper in R2R processes

### Introduction

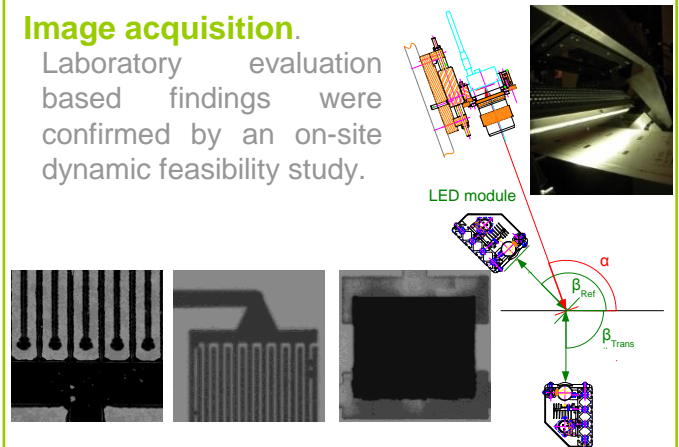
IN-CORE Systèmes supplies real time quality control systems based on 100% visual inspection solutions for a wide range of different applications including printed electronics applications (OPVs, TCFs, RFIDs, etc.) manufactured in printing and coating processes. Technological advancements achieved the framework of the A3Ple FP7 project enabled an improved inspection solution for printed electronic circuitry on paper.

### Objectives

- Define image acquisition conditions for each ink printing step to highlight defects with critical impact to the functionality of the electrical circuit.
- Evaluation of the system in the framework of a dynamic feasibility study at LabelTech.
- Develop image processing, statistical methods and software components permitting automated optical inspection.
- Validate the inspection approach during the demonstration phase of the project.

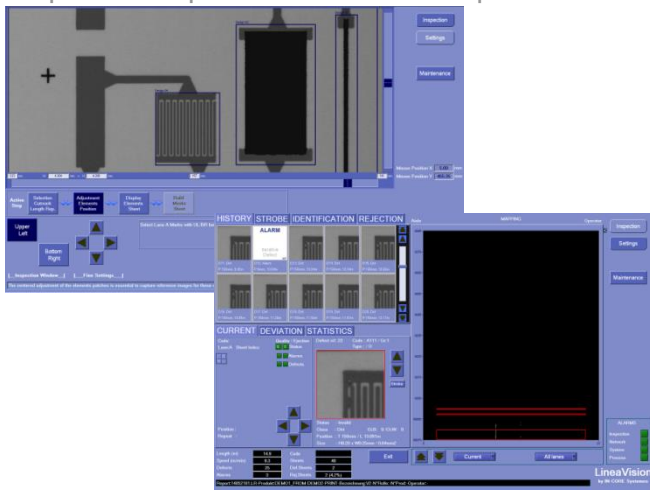
### Image acquisition.

Laboratory evaluation based findings were confirmed by an on-site dynamic feasibility study.



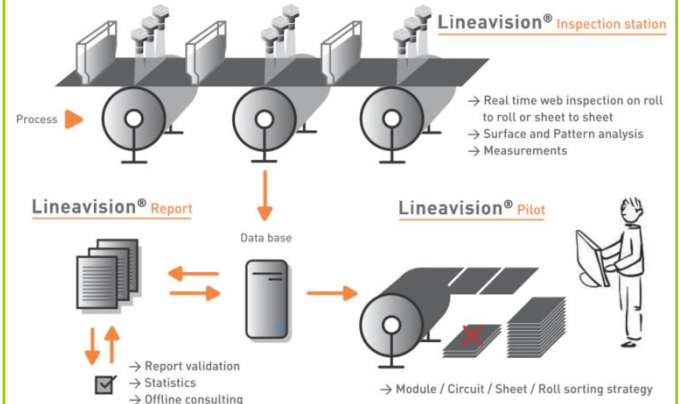
### LineaVision for PE applications

A software solution dedicated to match PE inspection requirements was developed.



### Implementation in print flow

The used software infrastructure enables trace inspection results in multiple step processes.



### Results and work in progress:

Systèmes demonstrates an inspection solution for electronic circuitry printed on flexible substrates within the framework of the A3Ple project. Results from first print runs show the ability of the system to detect hard, electrical functionality influencing defects such as circuit shorts and breaks, lack and excess of ink, and feature registration in multi print step processes.

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