DropBonder™ Technology for Inkjet Printed Interconnections

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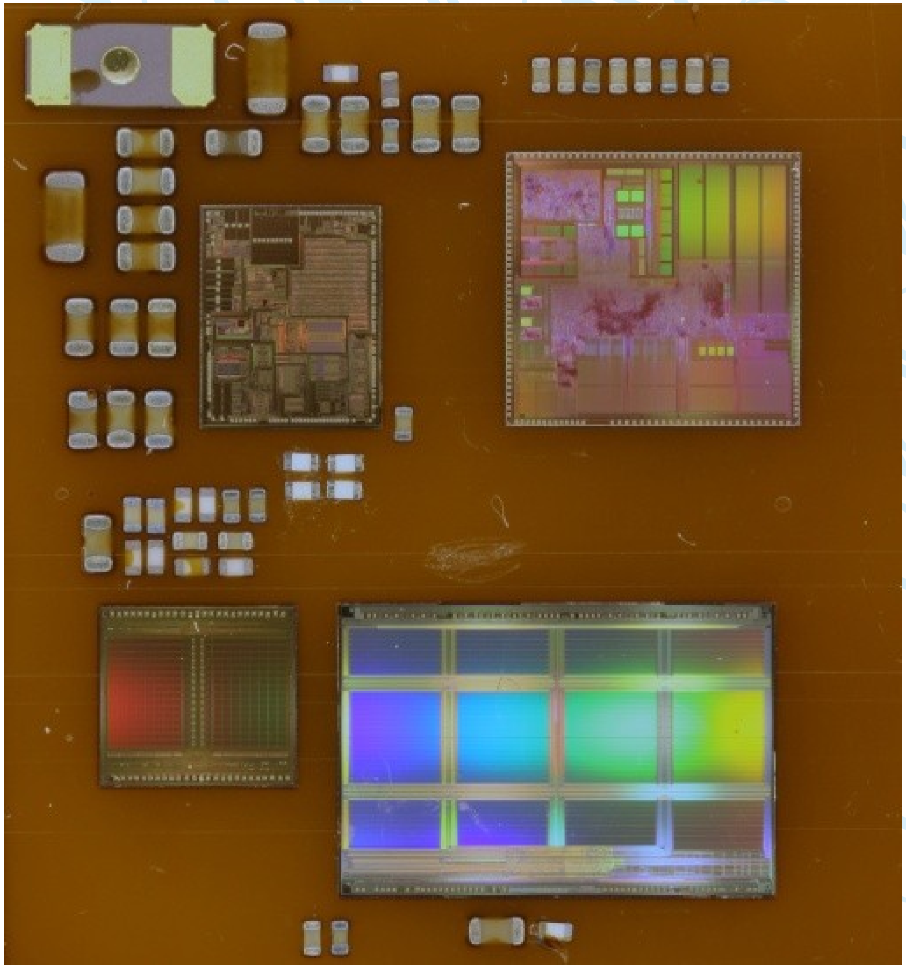
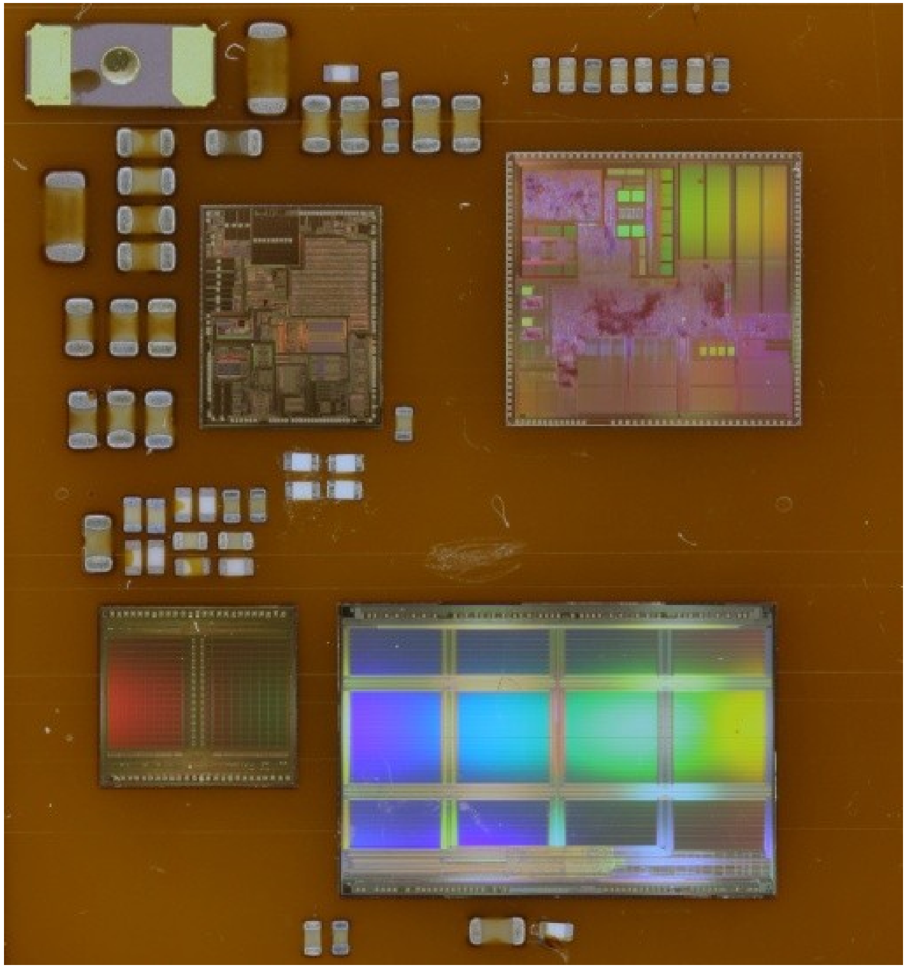
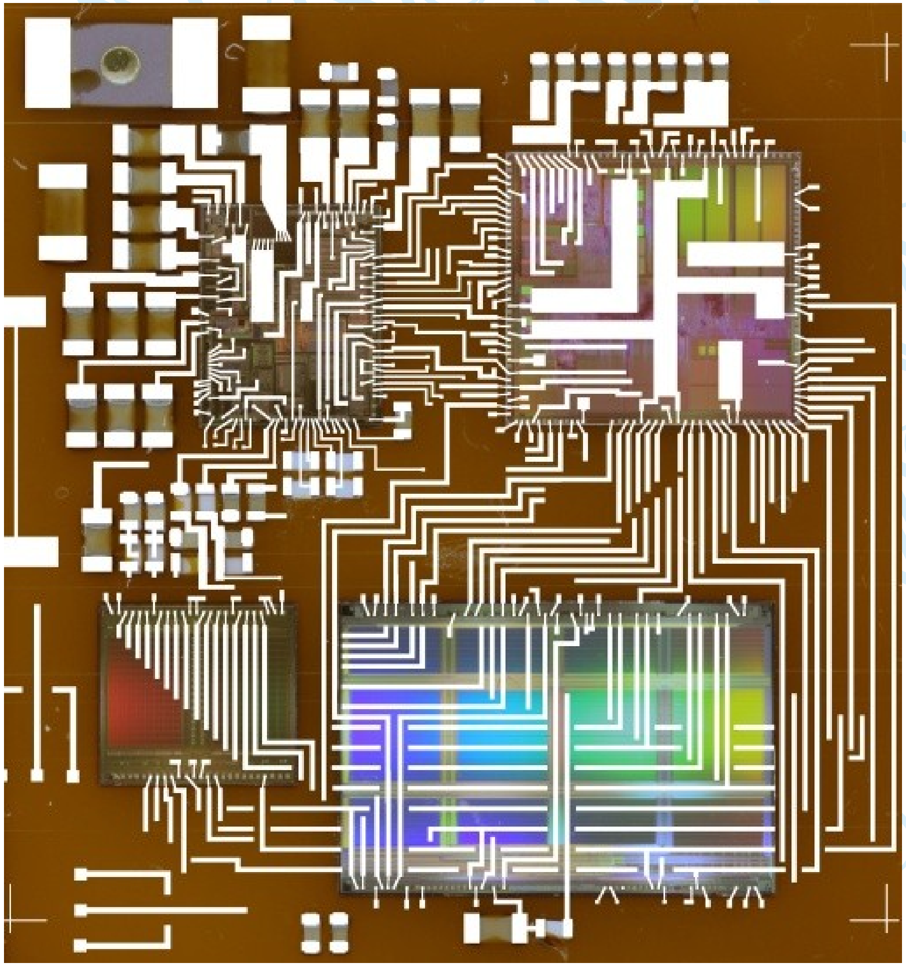
Target Application

- DropBonder™ is a solution for printing multichip module(DropSiP™) interconnections on distored substrates.
- DropSiP™ is a logical replacement of wirebonding, interposer and/or printed wired board (PWB).



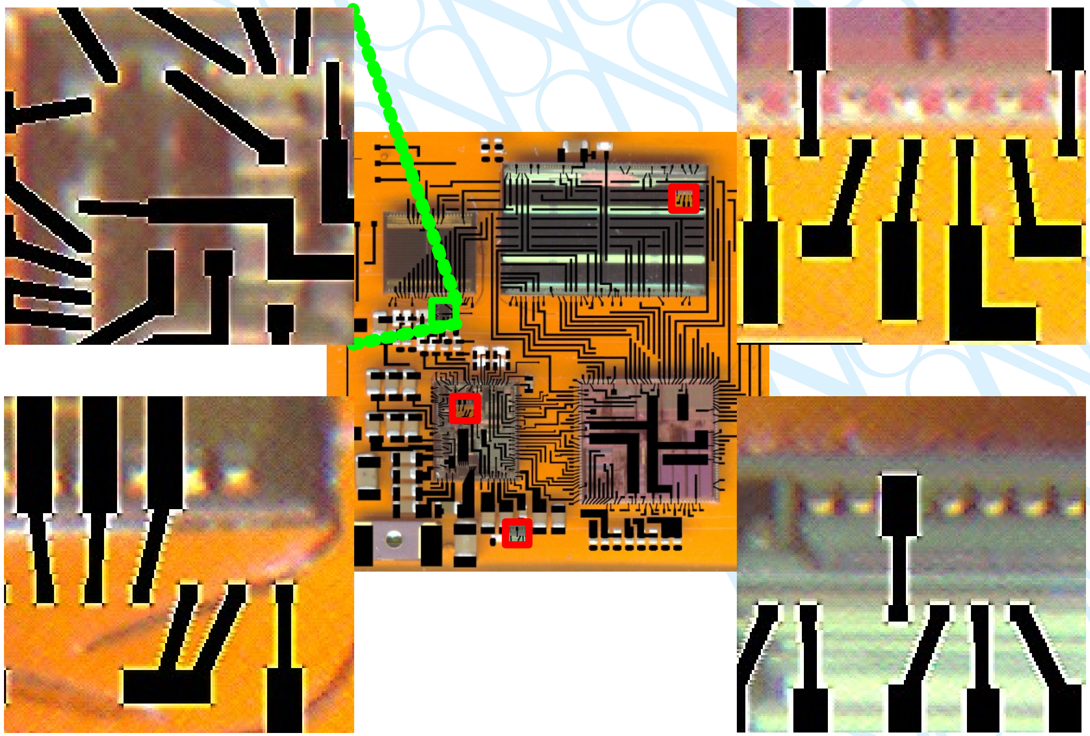
Printing Data





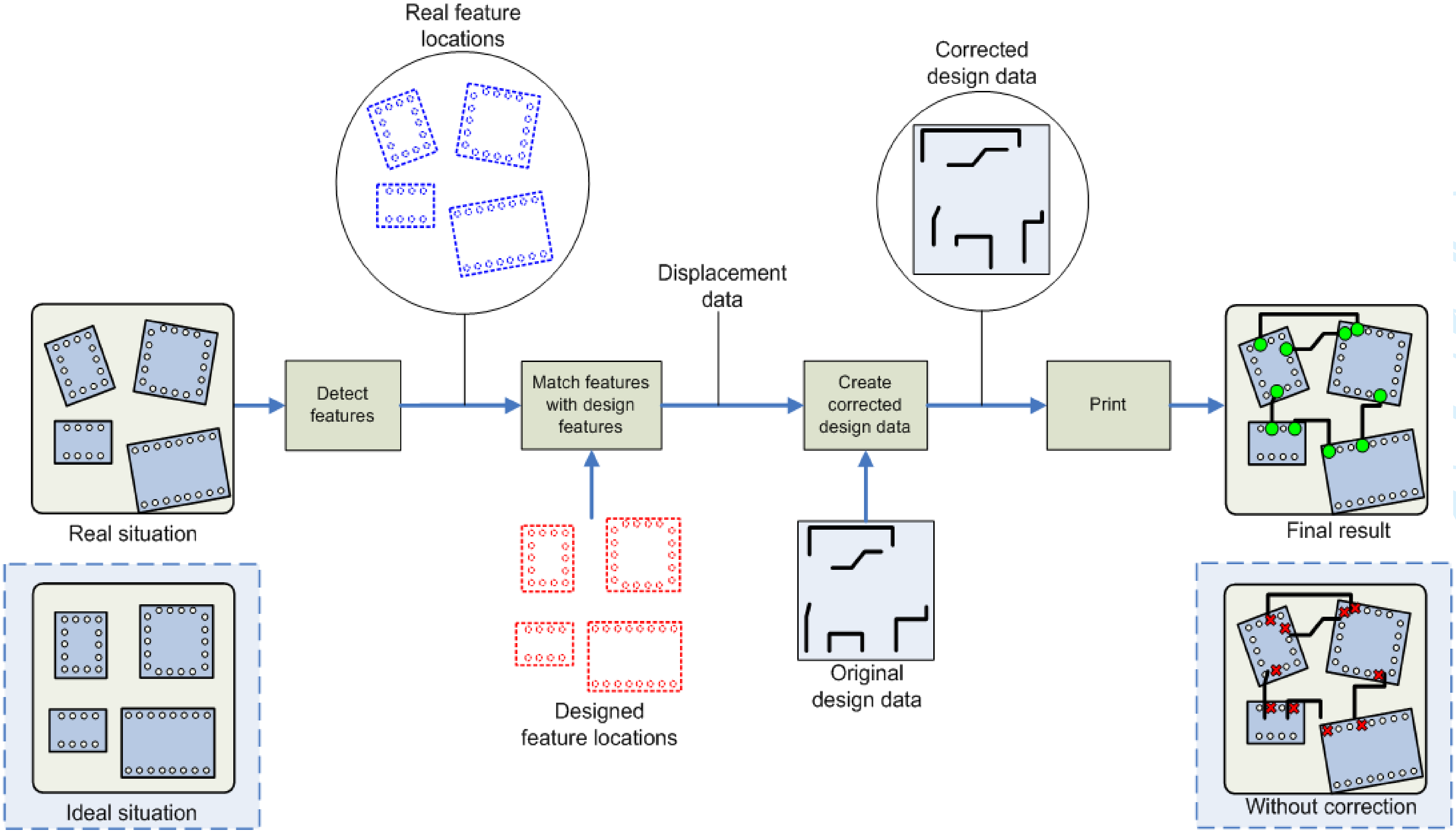
Problem

- Substrate distortion
  - Mismatch between printed wiring and connector pads



- Example module
  - ~17mm wide
  - Pad diameter 44µm
  - ICs have drifted hundreds of microns
  - Errors increase in larger designs

Patented solution



Real situation

Detect features

Real feature locations

Match features with design features

Designed feature locations

Displacement data

Create corrected design data

Original design data

Corrected design data

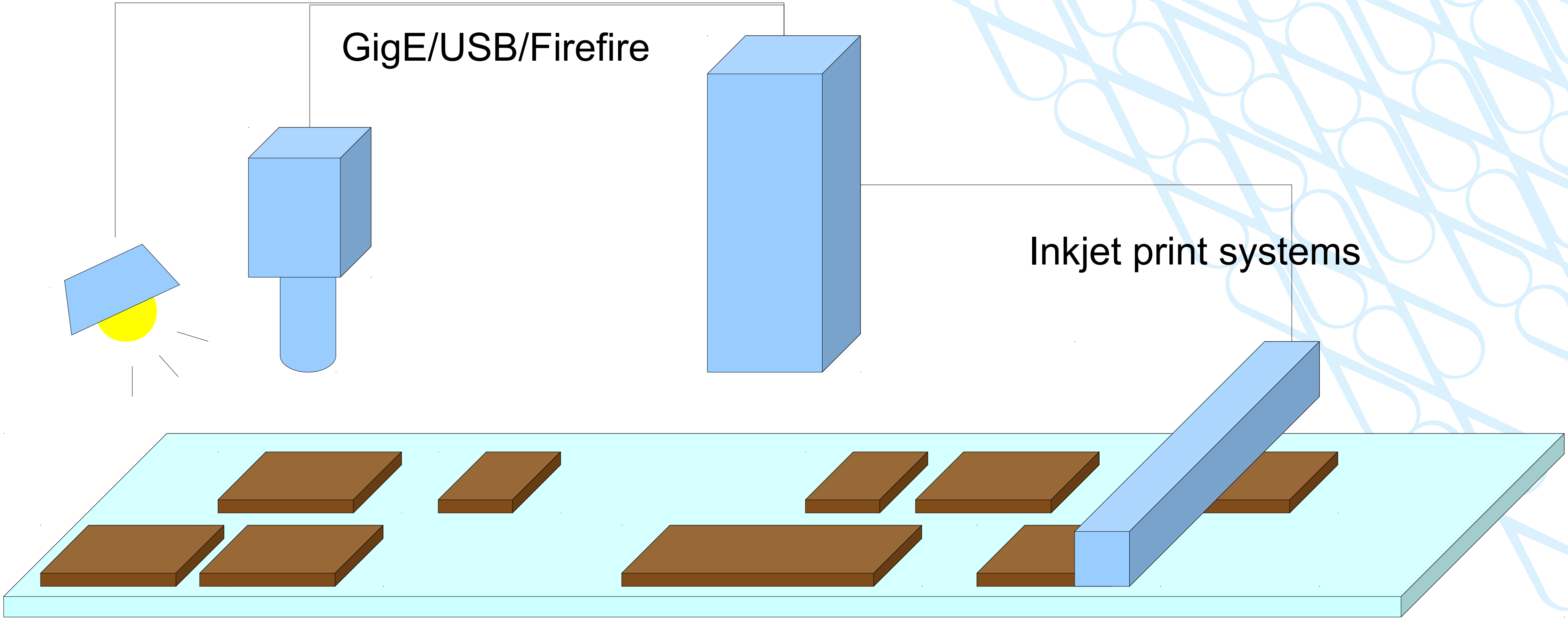
Print

Final result

Ideal situation

Without correction

System HW elements



High resolution camera

Multi-core CPU Computer
running DropBonder™ and
DropFoil™ algorithms

Flashlight

GigE/USB/Firefire

Inkjet print systems

Multiple module castings at printing stage

Some details

- Input: Design data in high resolution bitmap, in vector data or net-list formats
- Output: One to many bitmap files or custom specific data representation or direct system integration
- High accuracy drop addressing. 5 um (>5000 dpi) addressing used in printing trials. Addressing resolution is limited by printing system in question or sensor system used.
- Support for single module, multi-module and panel printing.
- Includes DropFoil™ functionality
    - Dimension control for narrow single drop lines and wide area foils
    - Thickness build-up option

Service Promise

- Pilot system integration to existing printing system will be done within 1 month from project initiation.
- Productized system will not create performance problems to production.
  - Note: Productization of the system will be started based on printing system used