# A Networked Workflow for a Fully Automated CtP Calibration System

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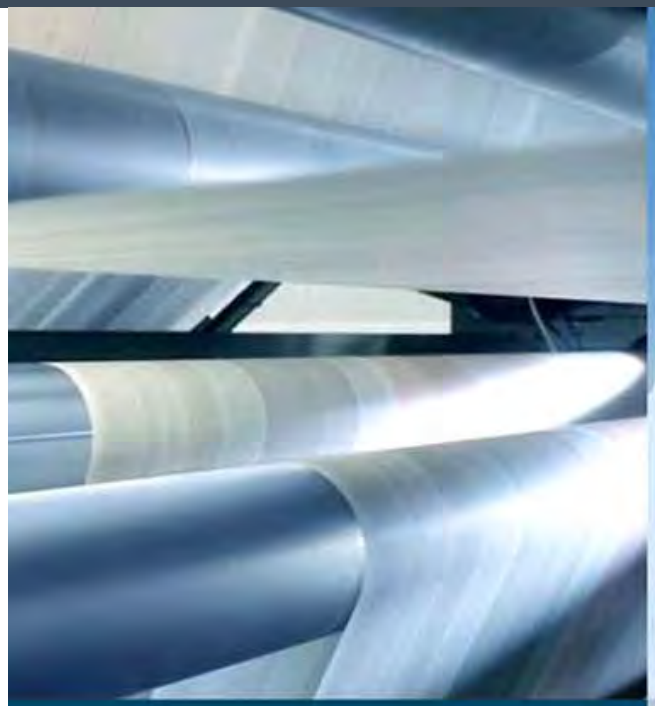


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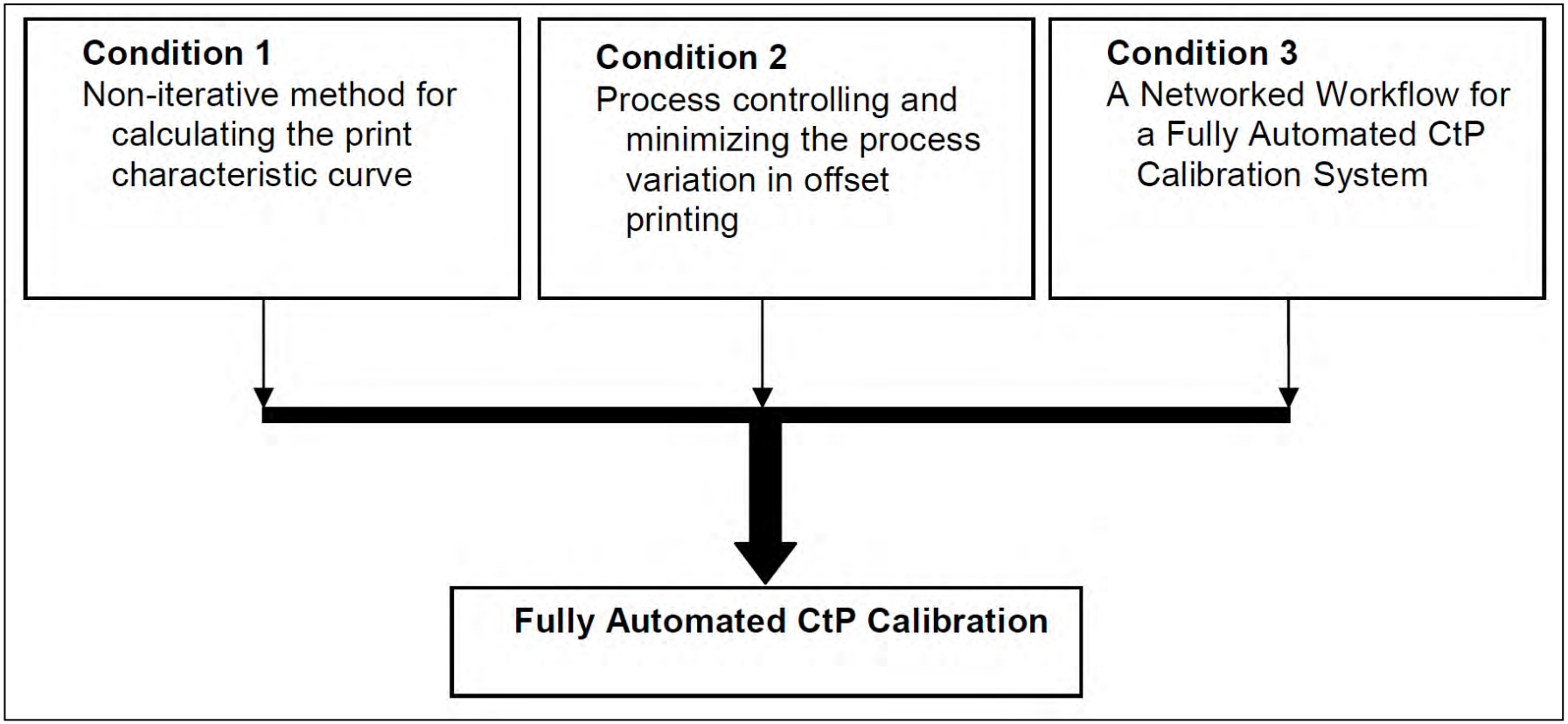
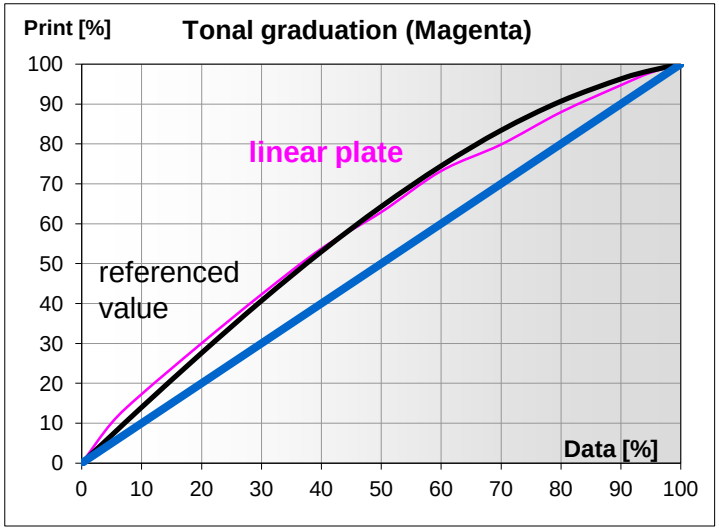
Quality Management
Printing Process

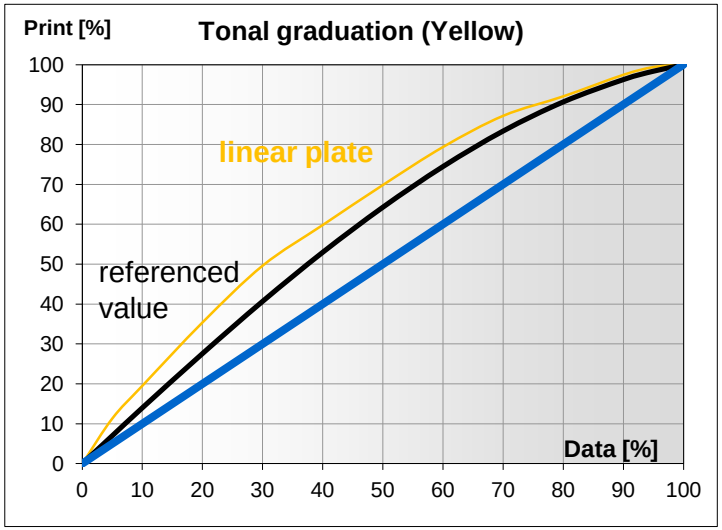
# Three necessary conditions for realizing the aim “Fully Automated CtP Calibration”



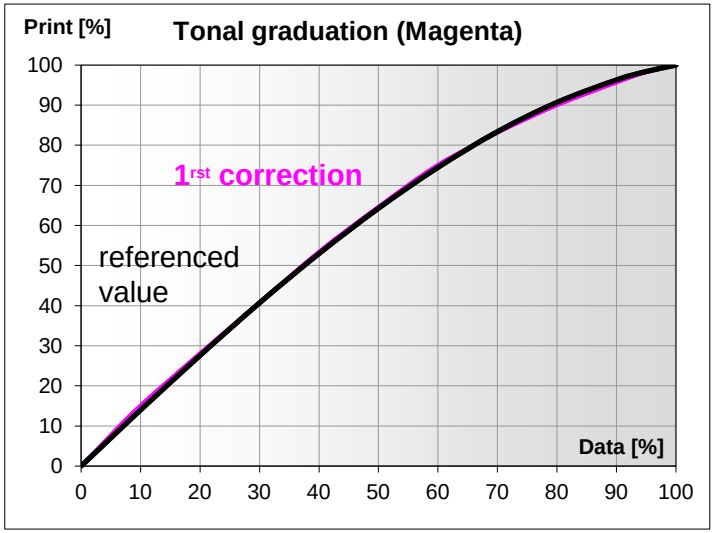
# Why does the printing process need a CtP calibration?

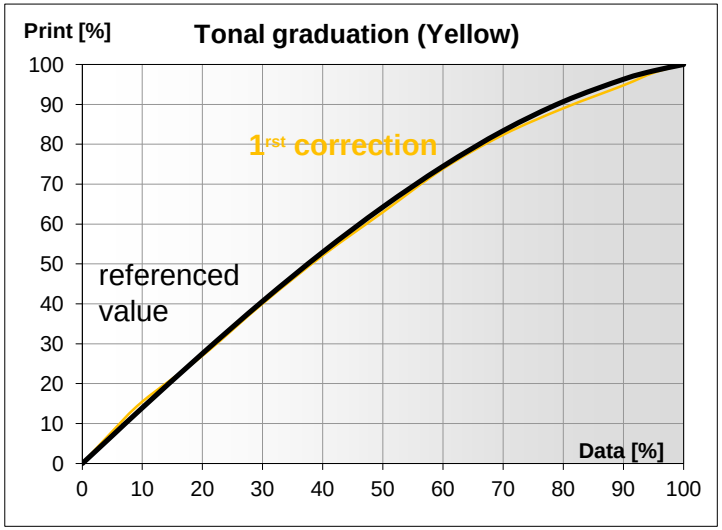
PCC before dot gain compensation



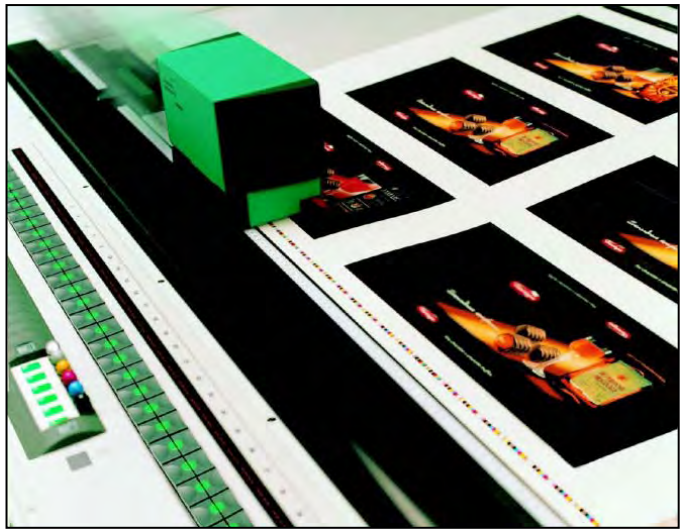

PCC after dot gain compensation



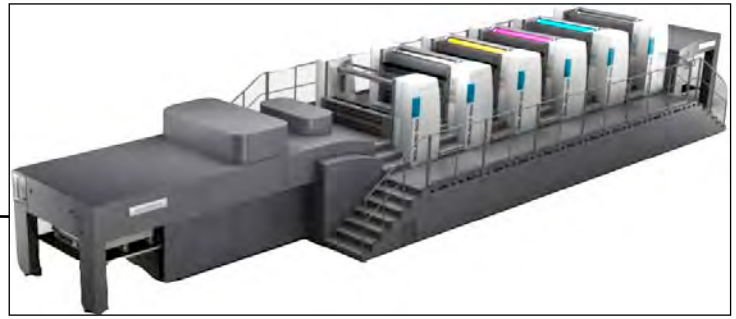
# ISO-12647 in short form

- Five different paper classes depend on the paper surfaces, and their Lab value and the gloss value of the paper surfaces.
- Achieving the target Lab value for solid (KCMY) in the printing process depends on each different paper class.
- The printed tone value and the resulted dot gain have to be in the range of the respective ISO reference value.

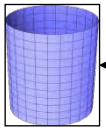


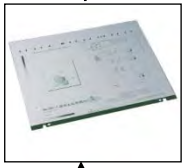
# Conventional CtP calibration

CtP calibration is needed for adjusting the dot gain in printing process.



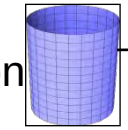
PCC
Calibration
Software





RIP

layout & imposition



# Realizing the third point of ISO-12647 (dot gain) is difficult and expensive in practice.

- In the practice, as many PCCs as the possible combinations of consumables are needed.

- The next difficult point is the fact that most PCCs have to be renewed after 3-6 months. The reasons are that the quality of the consumables changes a little bit and the climate condition of different seasons are variable.

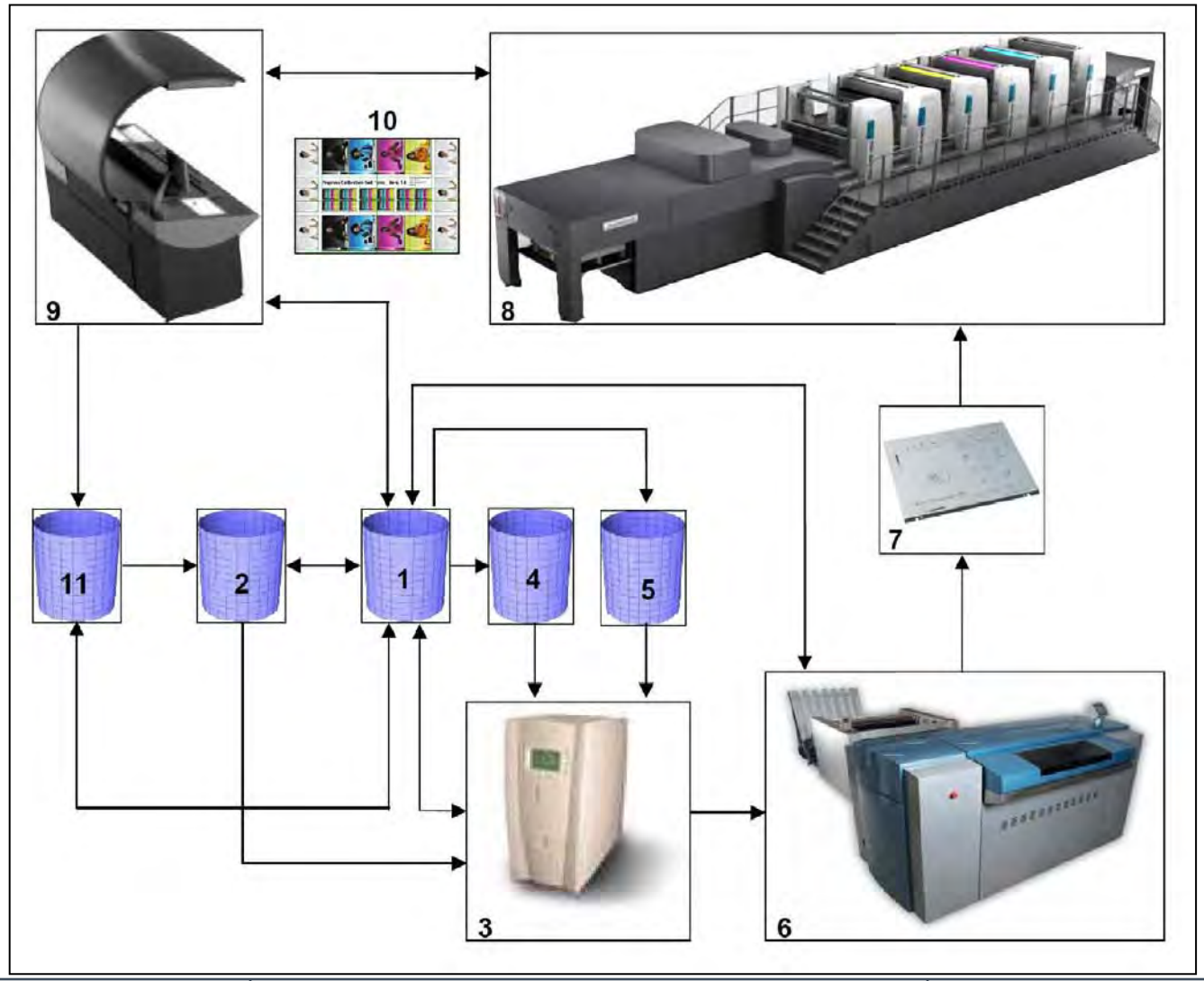
# In the practice, as many PCC as the possible combinations of consumables are needed.

- An example for the combination of consumables and screening in a printing company:

3 different paper classes (5 possible paper classes)
2 different printing processes (conventional printing and UV printing)
2 different inks for each process
2 different dampening solutions (with alcohol for UV printing and alcohol free for conventional printing)
4 different screening types (60 l/cm, 70 l/cm, 80 l/cm, FM 20 µm)

- The result of this case will be **96 possible combinations** with different PCC variations!

# A Networked Workflow for a Fully Automated CtP Calibration System




1. **Workflow Control System** (i.e. implemented in a MIS)
2. **PCC-DB (Print Characteristic Curve Data Base)**
3. RIP (Raster Image Processor)
4. Layout and Print data
5. Imposition program (templates)
6. CtP (Computer to Plate)
7. Printing plates
8. Press
9. Press control desk
10. Printed sheet
11. PQS-II program (non-iterative CtP- Calibra-tion tool)

# PCC information for managing the PCC-Data-Base

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Consumables

- Paper class
- Ink
- Plate
- Blanket
- Dampening

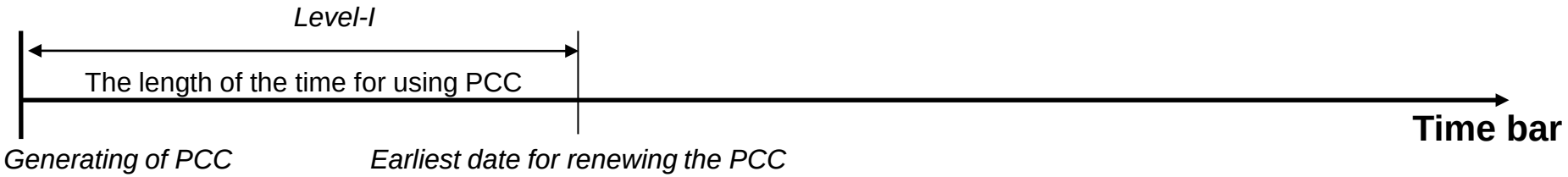
Machine

- Press number
- Process
- Machine setting

Date

- Date of the PCC generation
- The earliest date for renewing
- The latest date for renewing

# The time bar for the demonstration of generating, using, and renewing a PCC



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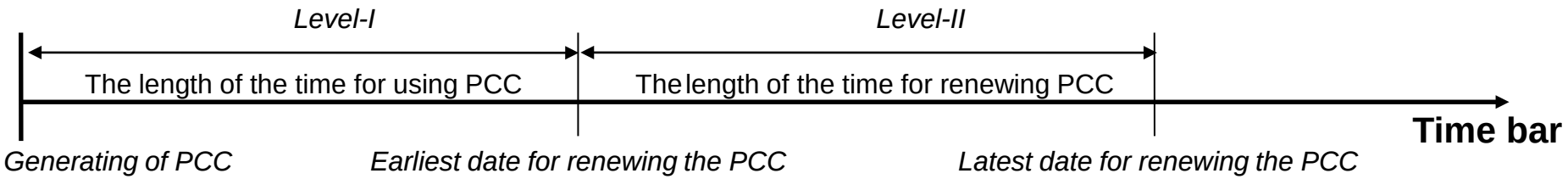

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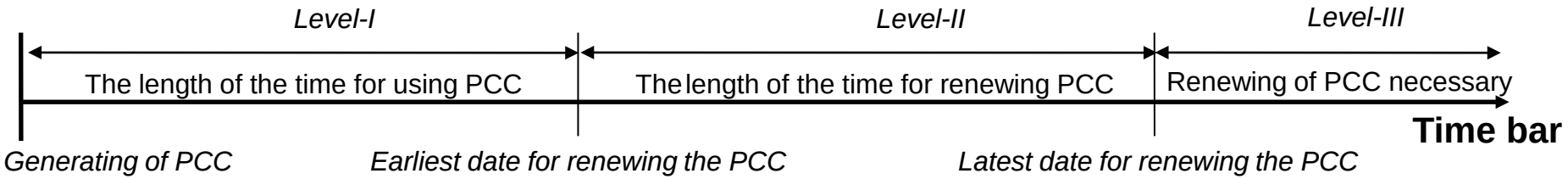
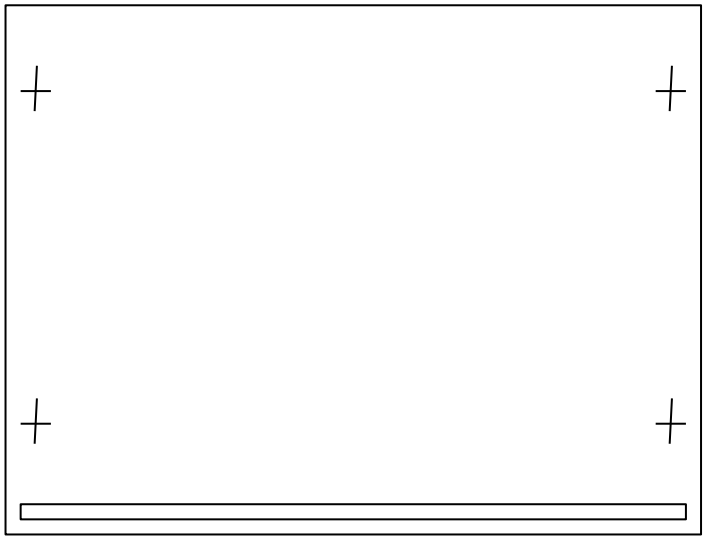


# Three cases with PCCs for the Workflow Control System of networked workflow

- First case: generating a new PCC (at begin of Level-I or during Level-III)
- Second case: only using a suitable PCC (during Level-I)
- Third case: using and renewing an existing PCC (during Level-II)

# Two different general templates for imposition

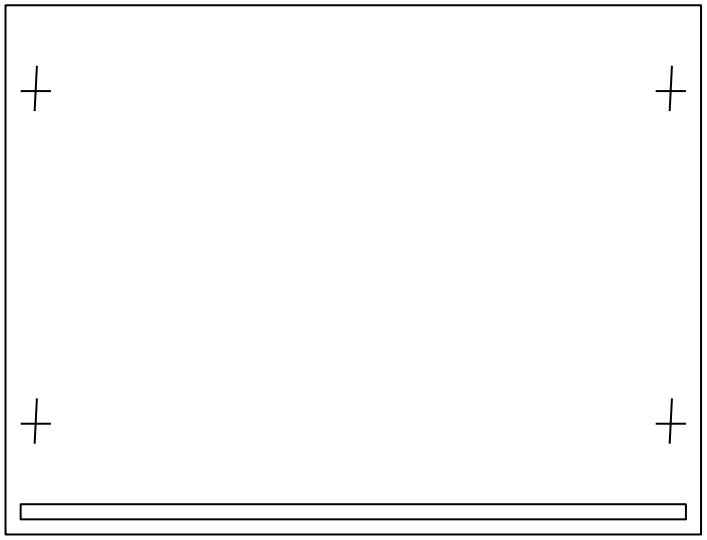
- A: The Template-I for the second case. The ink control strip, and register mark.



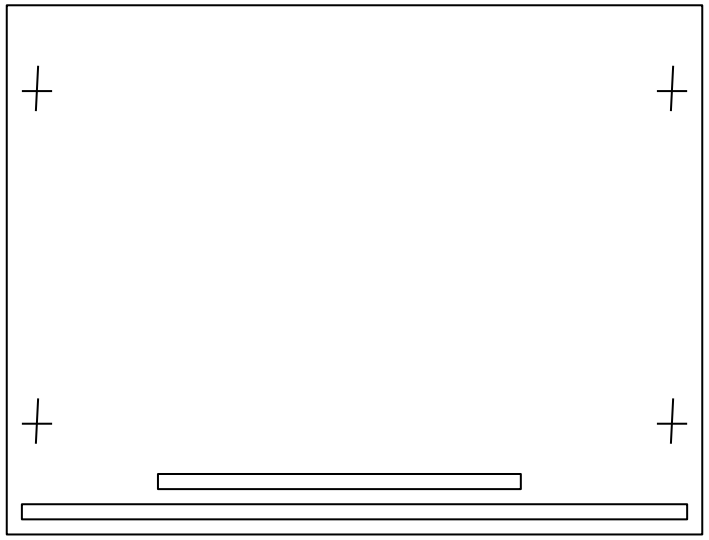
**A**

# Two different general templates for imposition

- A: The Template-I for the second case. The ink control strip, and register mark.
- B: The Template-II for the first and third case. The ink control strip, PCC-Generating-Strip, and register mark.

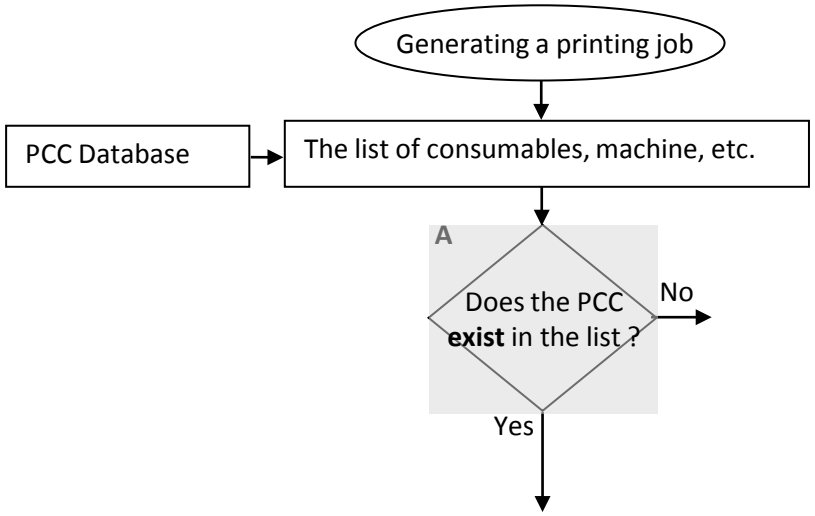


A



B

# Job generating in the Workflow Control System and the possible three cases



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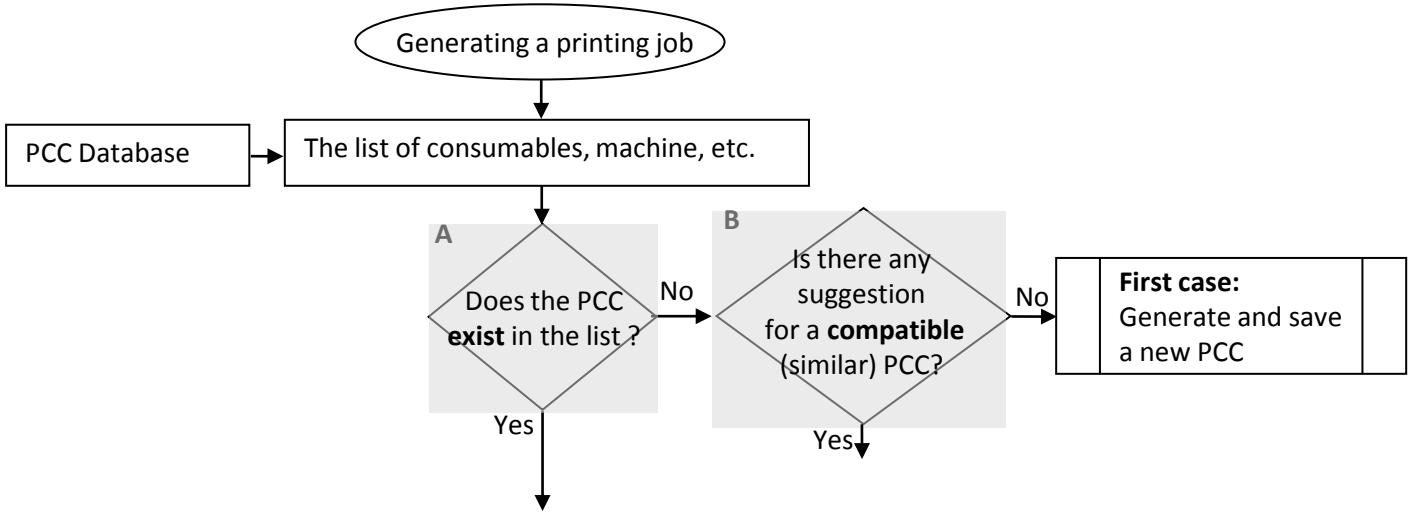

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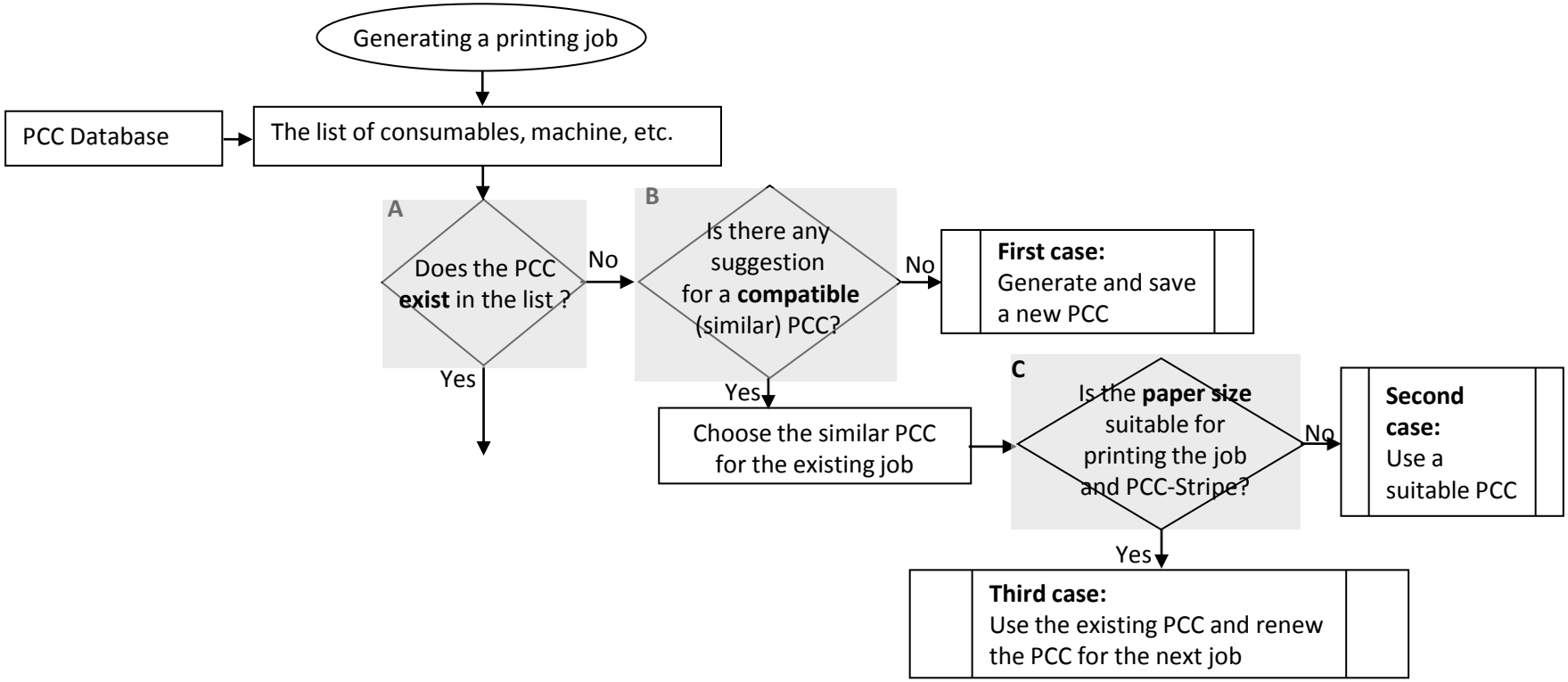

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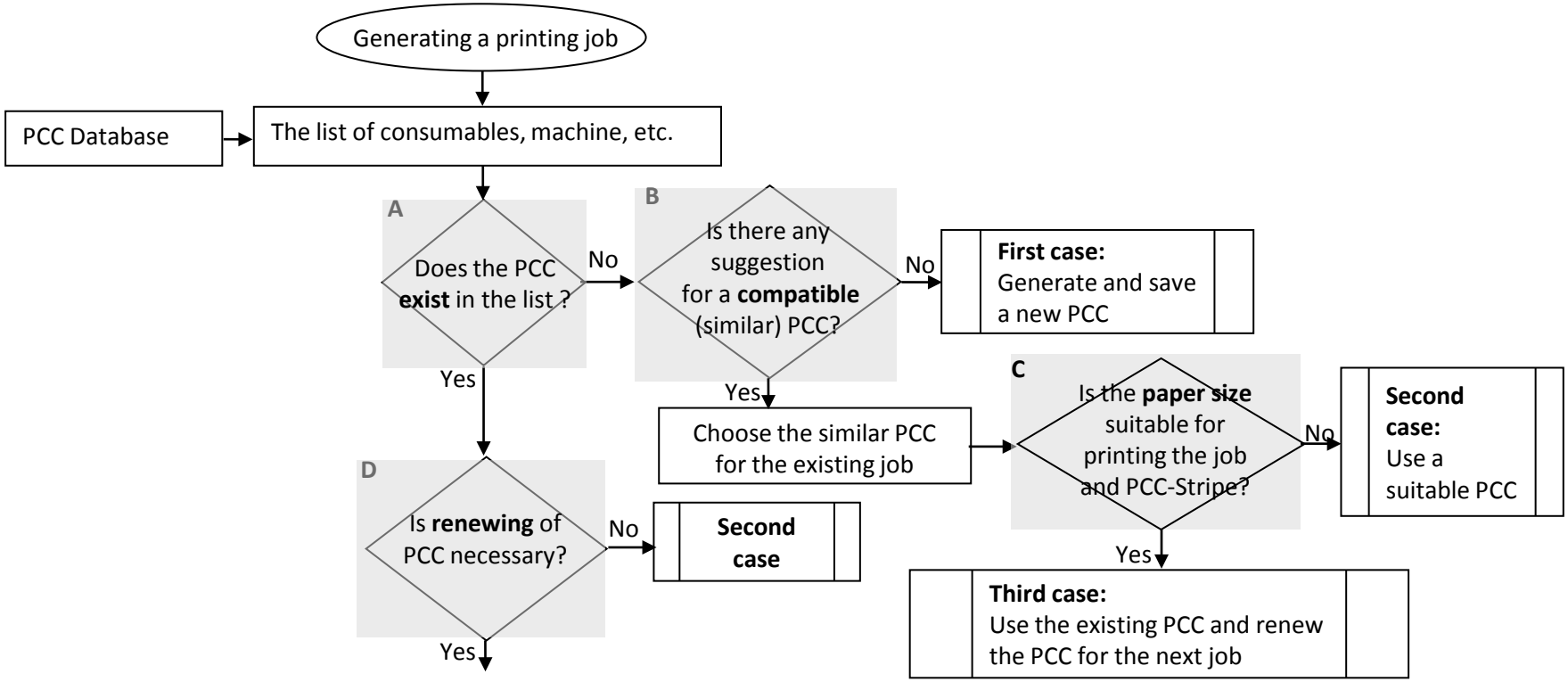

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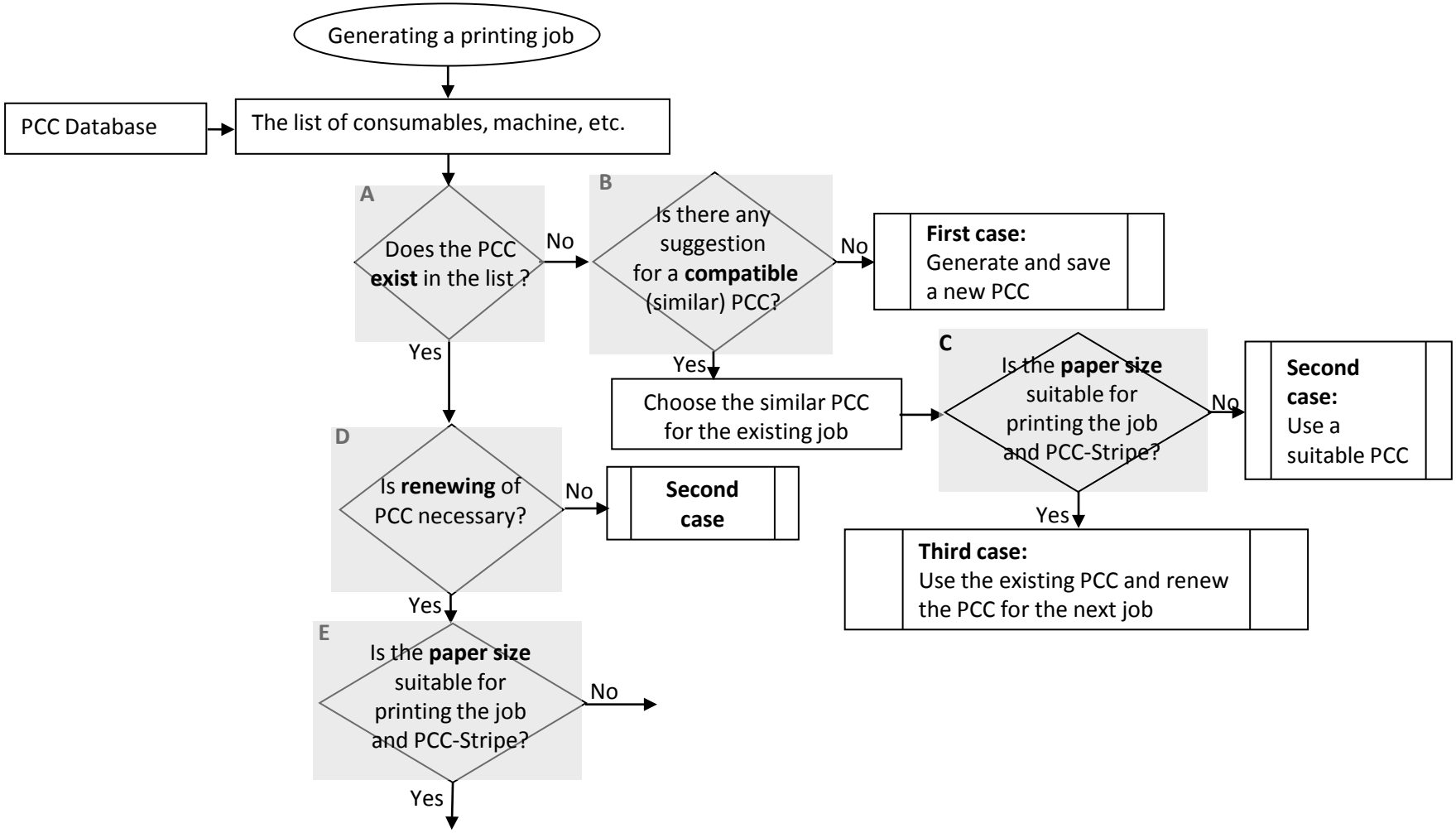

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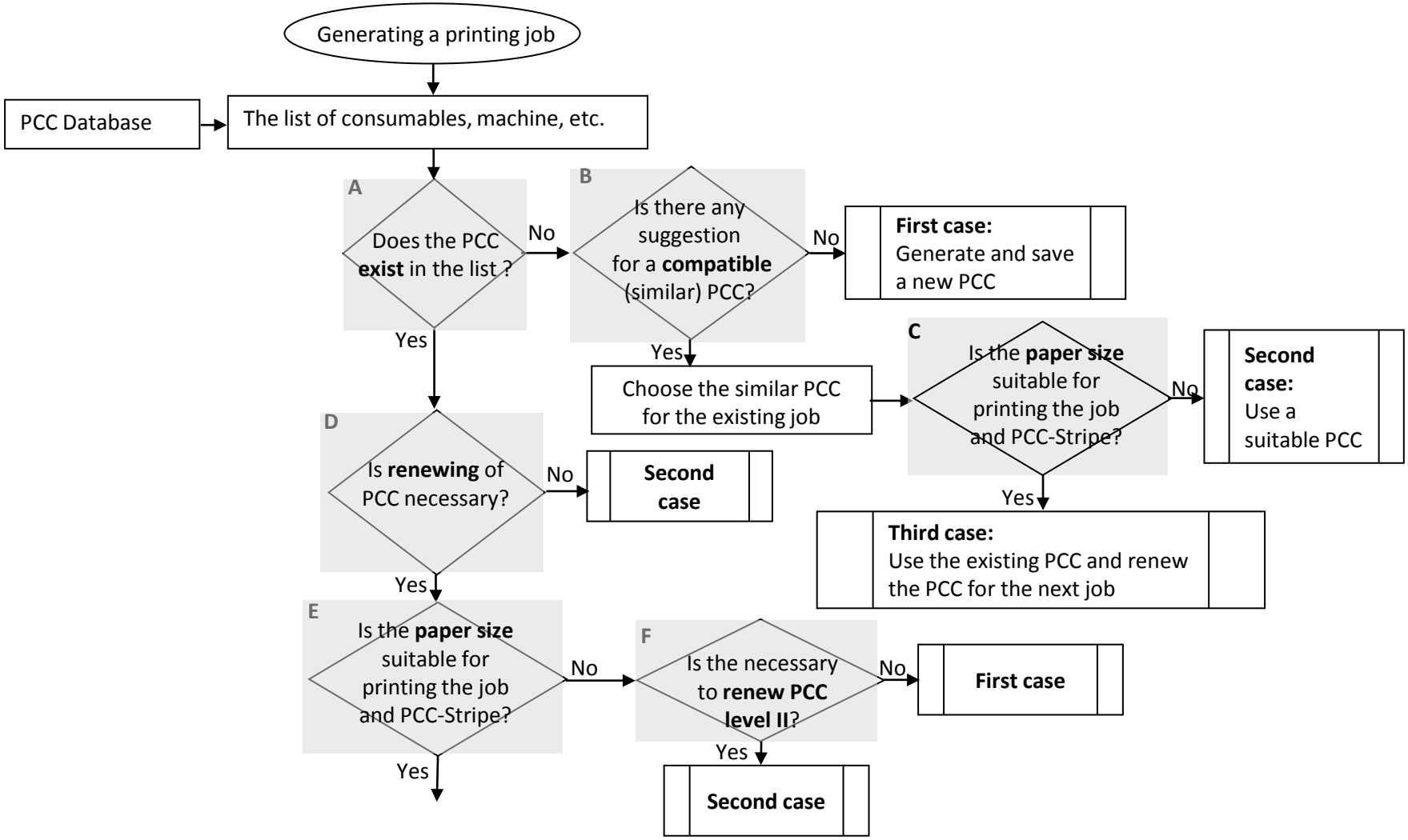

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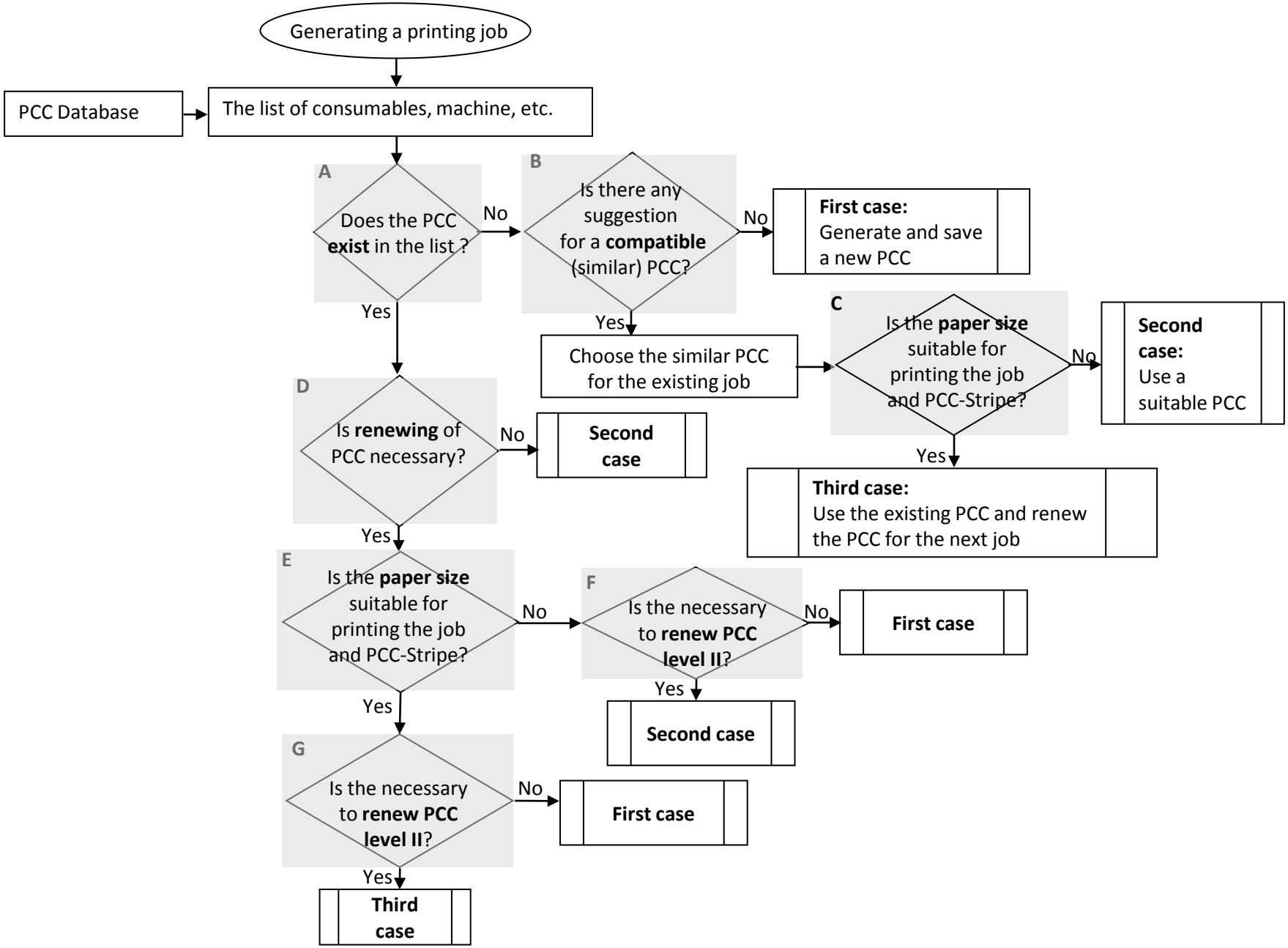

# The advantages of a Fully Automated CtP Calibration System are as following:

- The system can replace the needed knowledge of CtP calibration.
- Minimizing the operator mistakes during the generation of a PCC.
- During the automation of generating and administrating, a high number of PCC will be available. That means the number of jobs and production inside the ISO definition will increase.
- The renewing of the old PCC will be administrated completely automatically.
- Time, consumables and money will be saved because the calibration procedure will be combined mostly with the daily production.

# Thank you very much for your attention!

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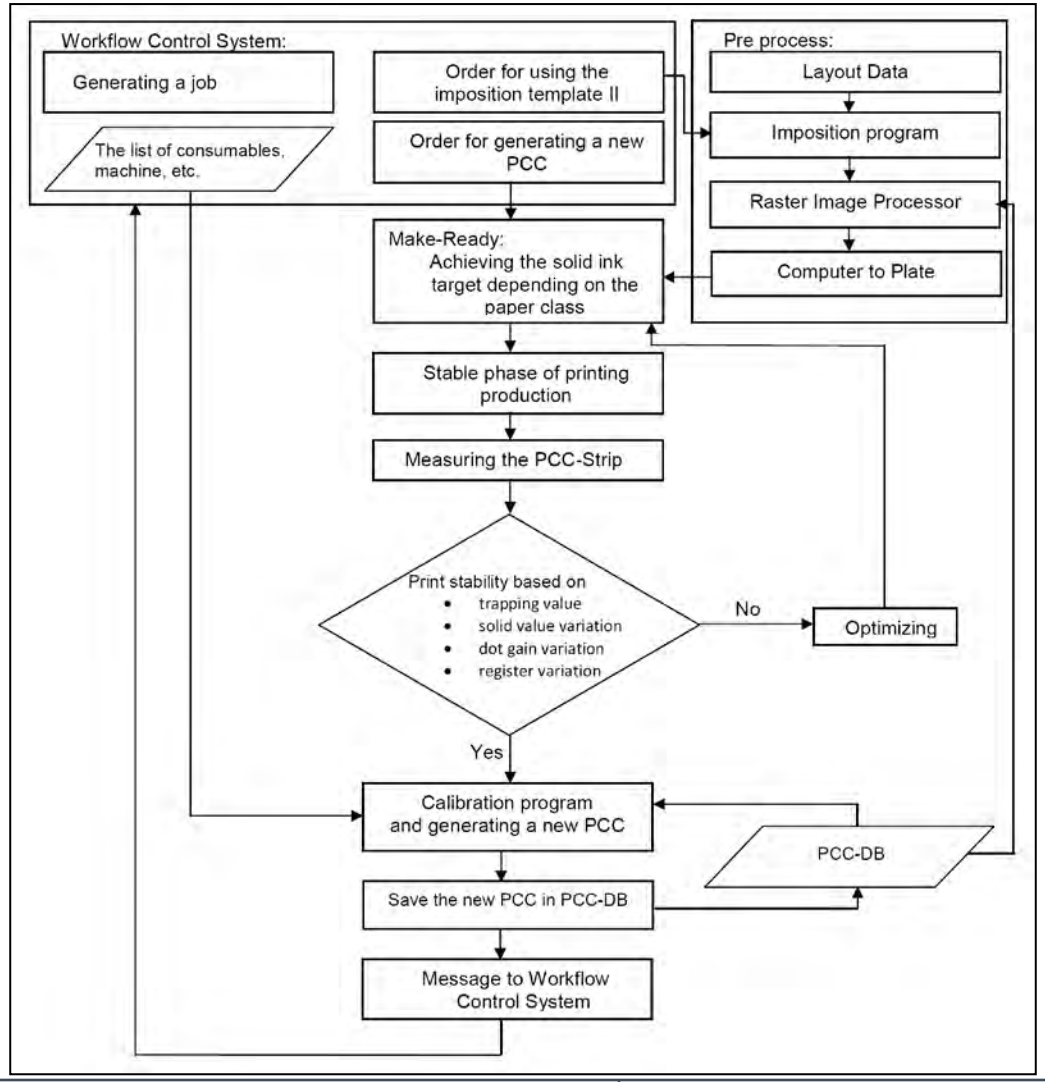
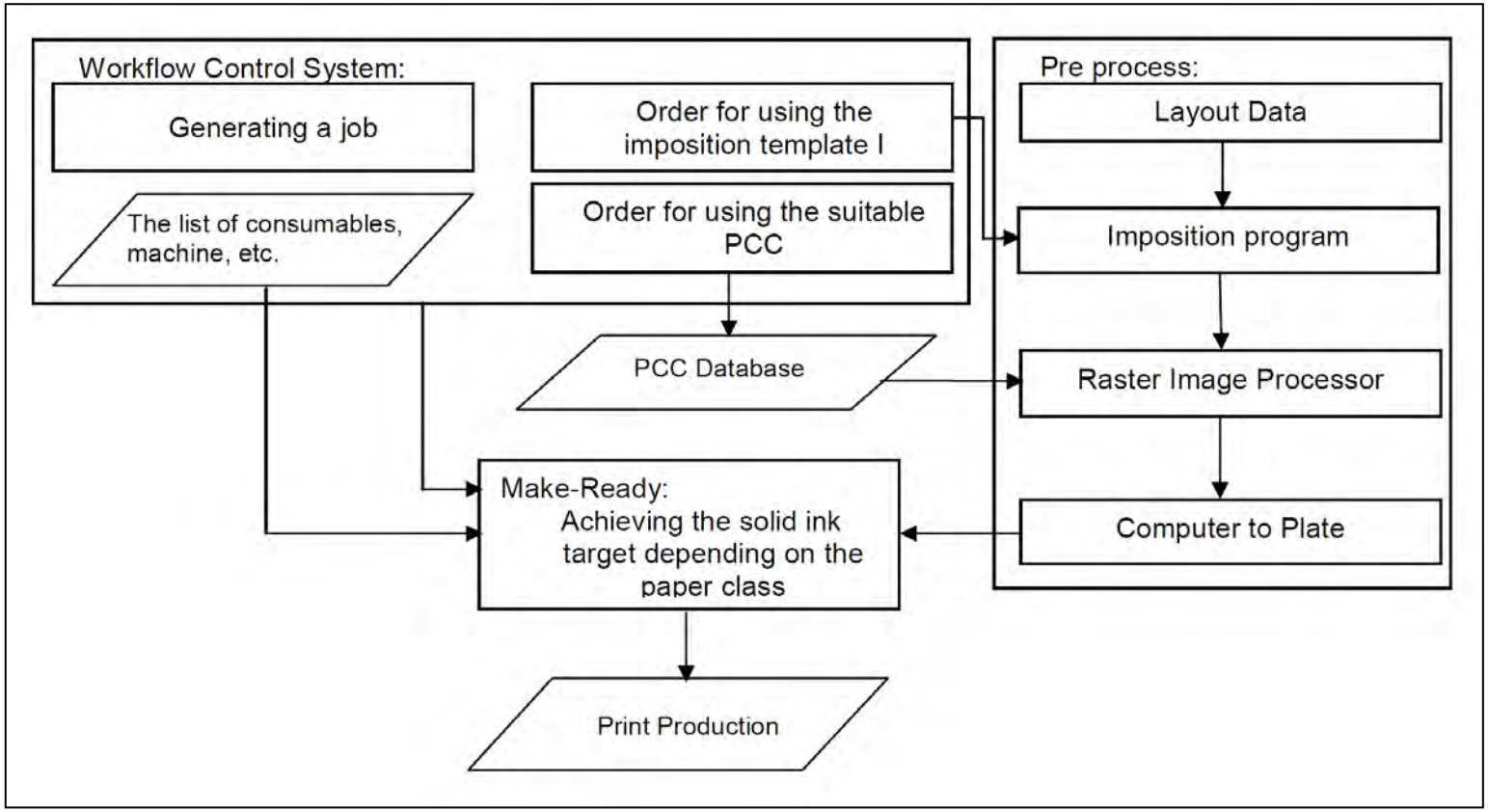
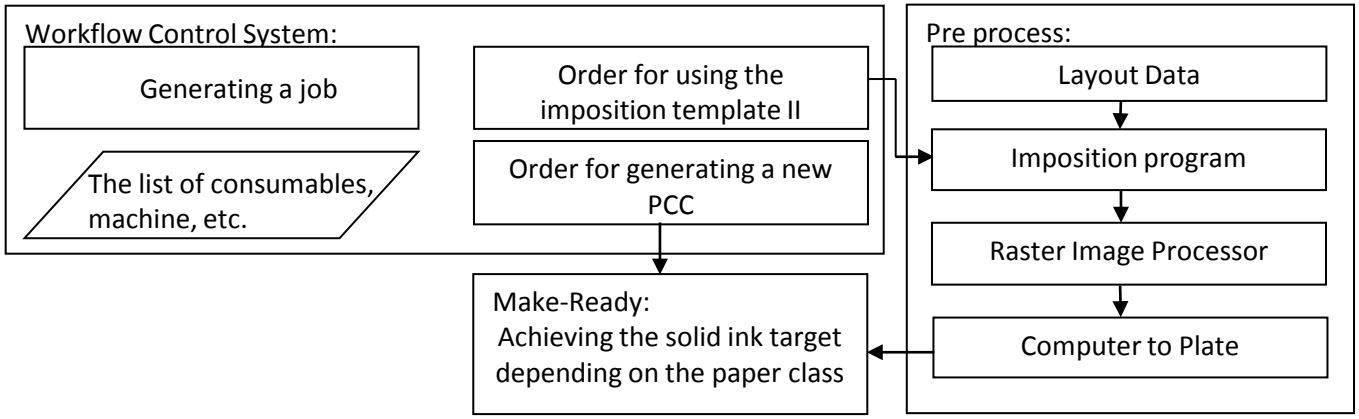
# First Case: Generating and saving of a new PCC



# Second Case: Using of a suitable PCC



# Third case, the renewing of an existing PCC



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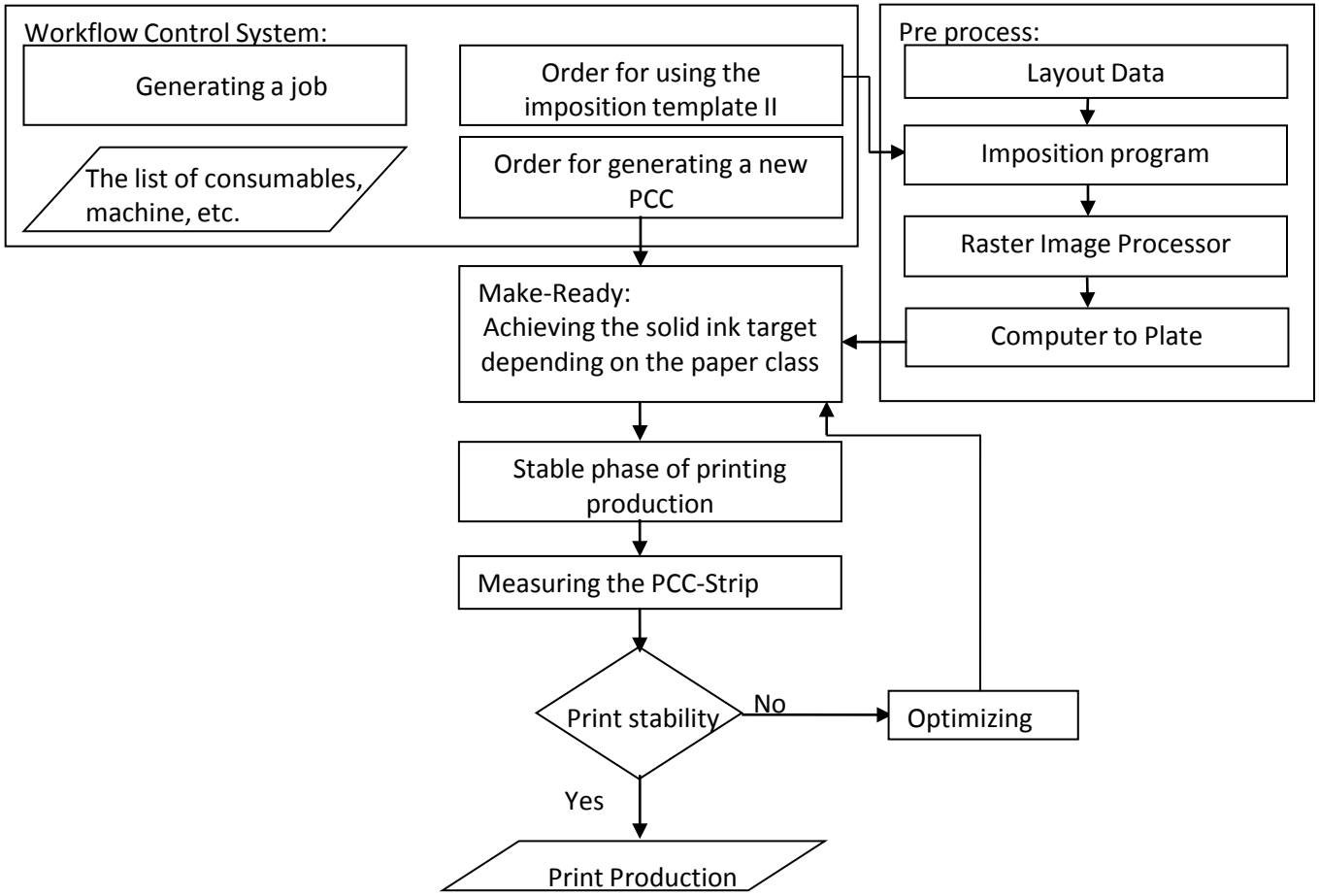

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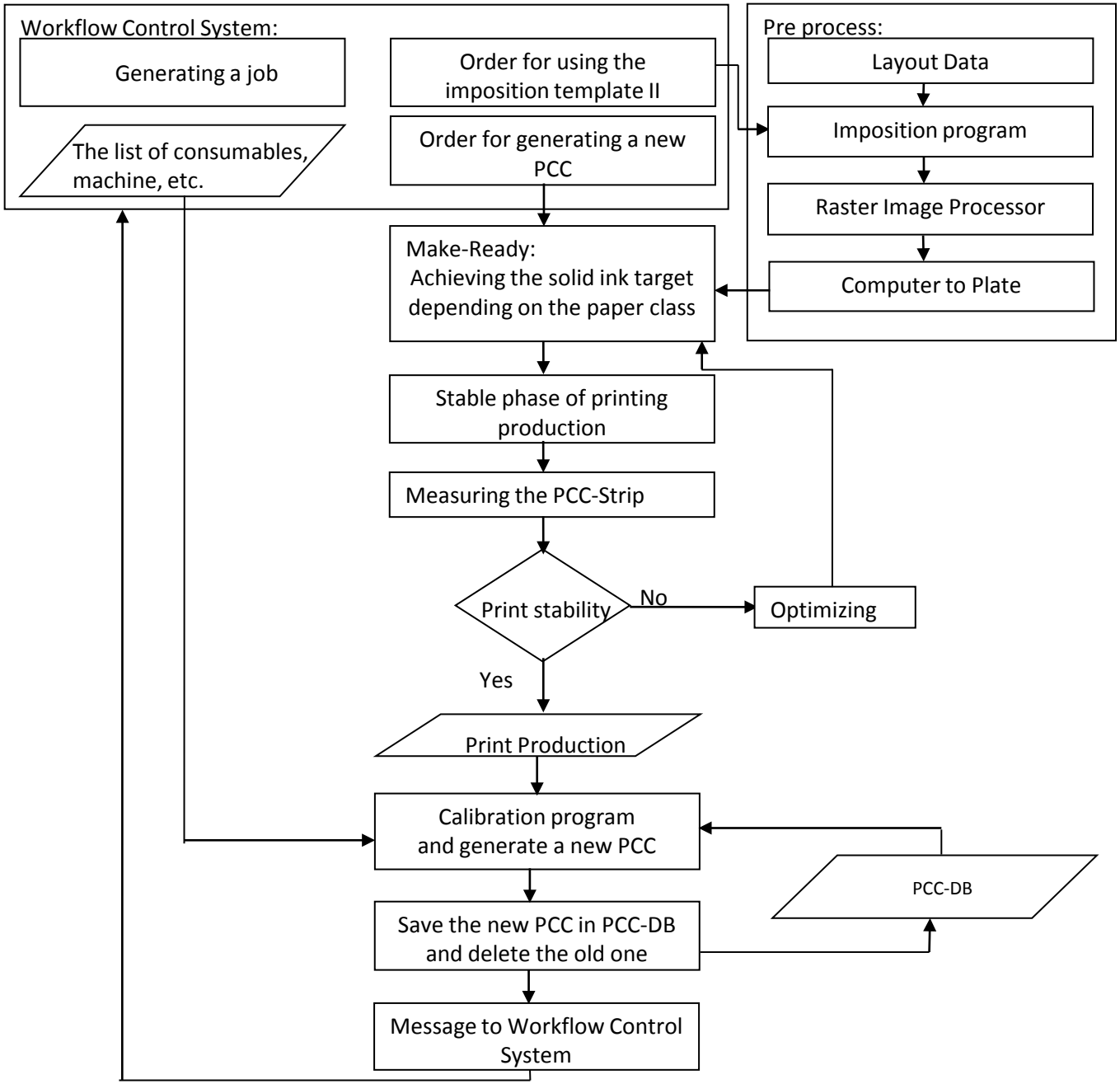

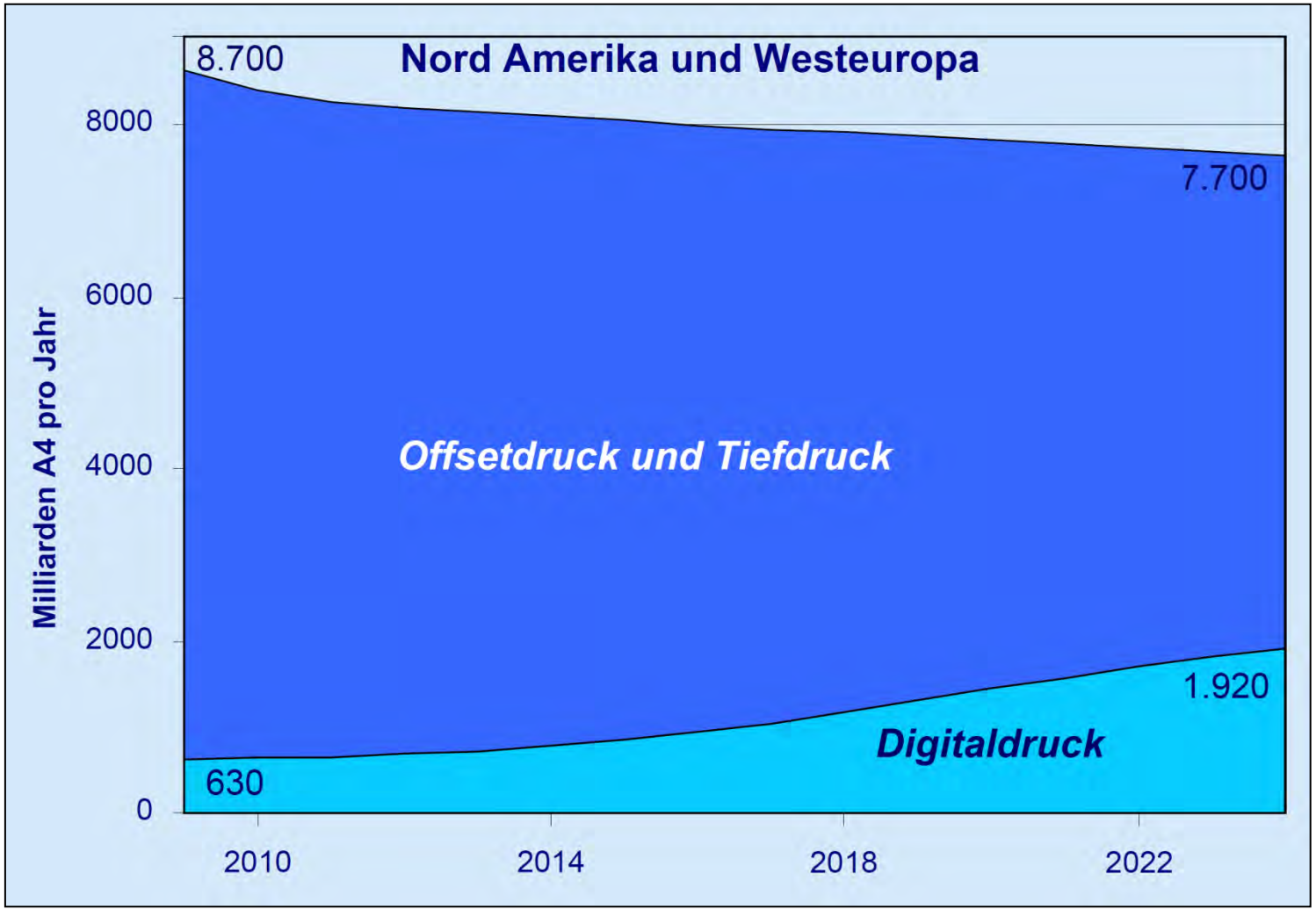
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