

# PROTOTYPING OF 3D-PRINTED PRODUCTS AND A COMPARATIVE LCA

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## AIM

Product optimization for 3D printing and comparative LCA assessment for the spare parts.



## STEPS

Designing of the spare parts

Identification of the parts which can be 3D printed.

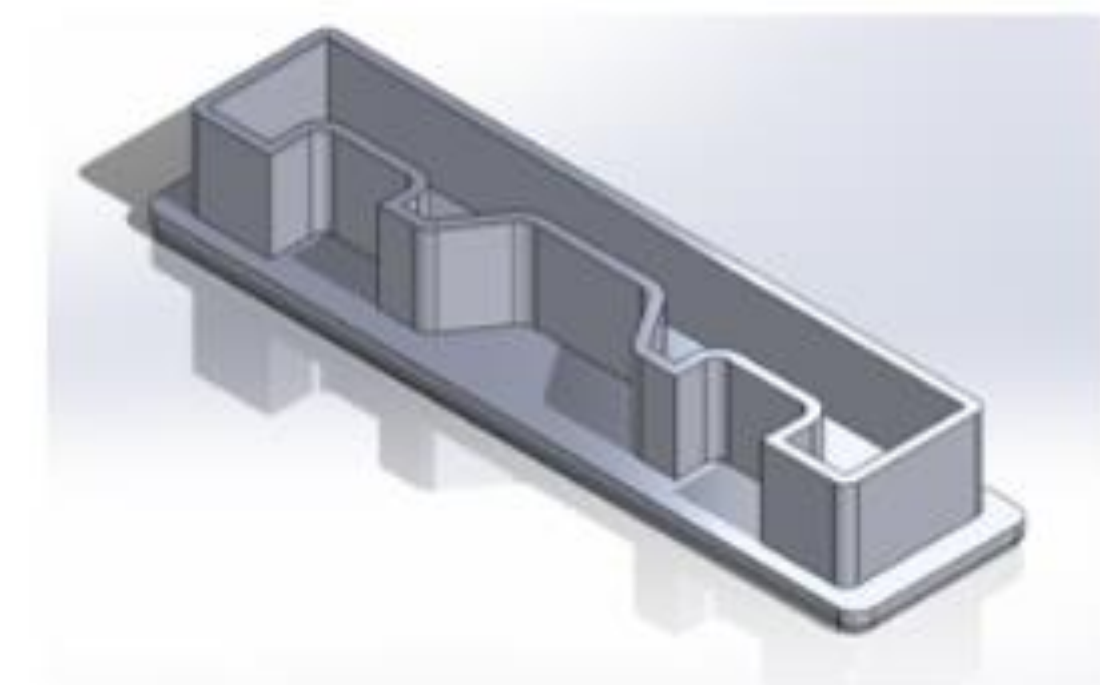
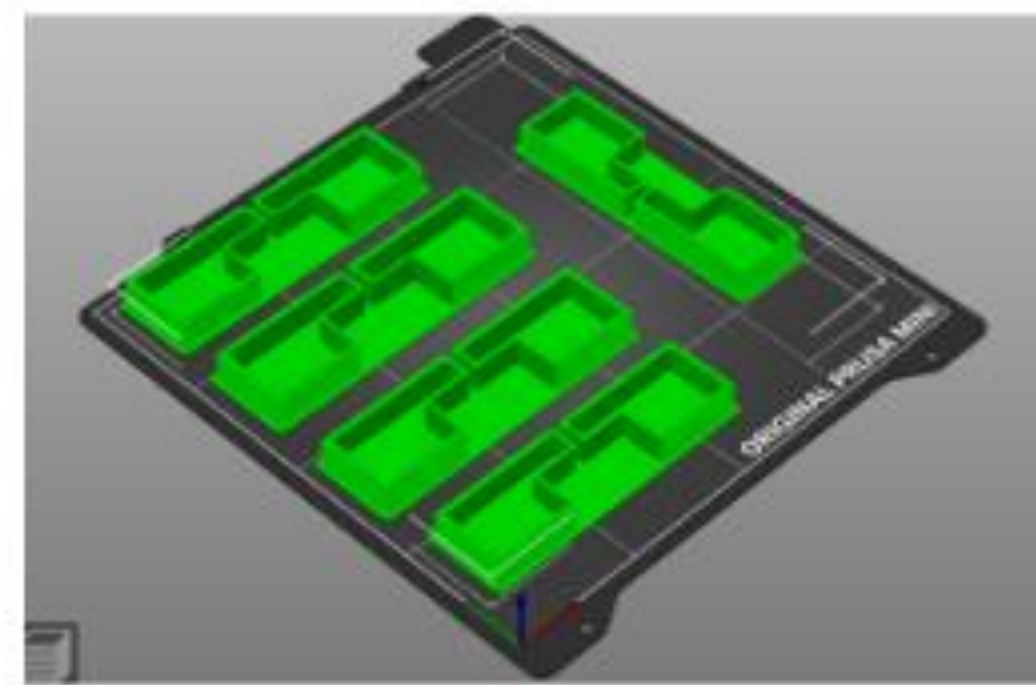
Checking the functionality of the printed parts.

Performing LCA and analysing carbon footprints for the parts.

## DESIGN



SOLIDWORKS



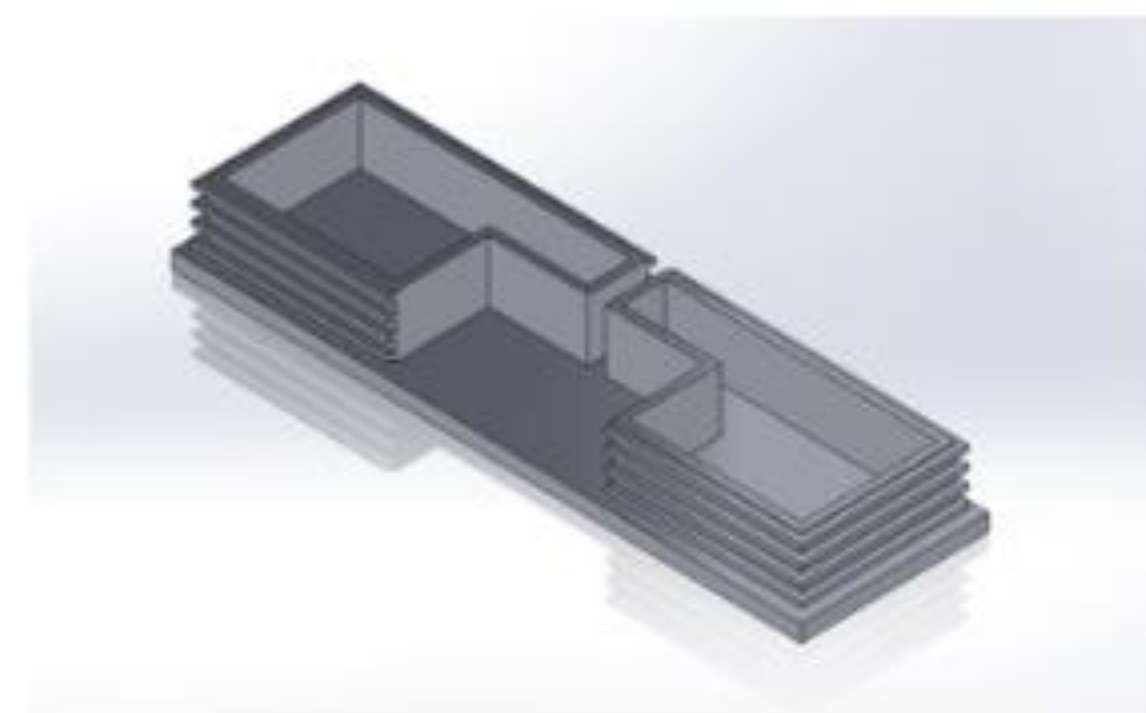
Identify Parts

CAD

Slicing

Initial Prototyping

Redesigning for FDM

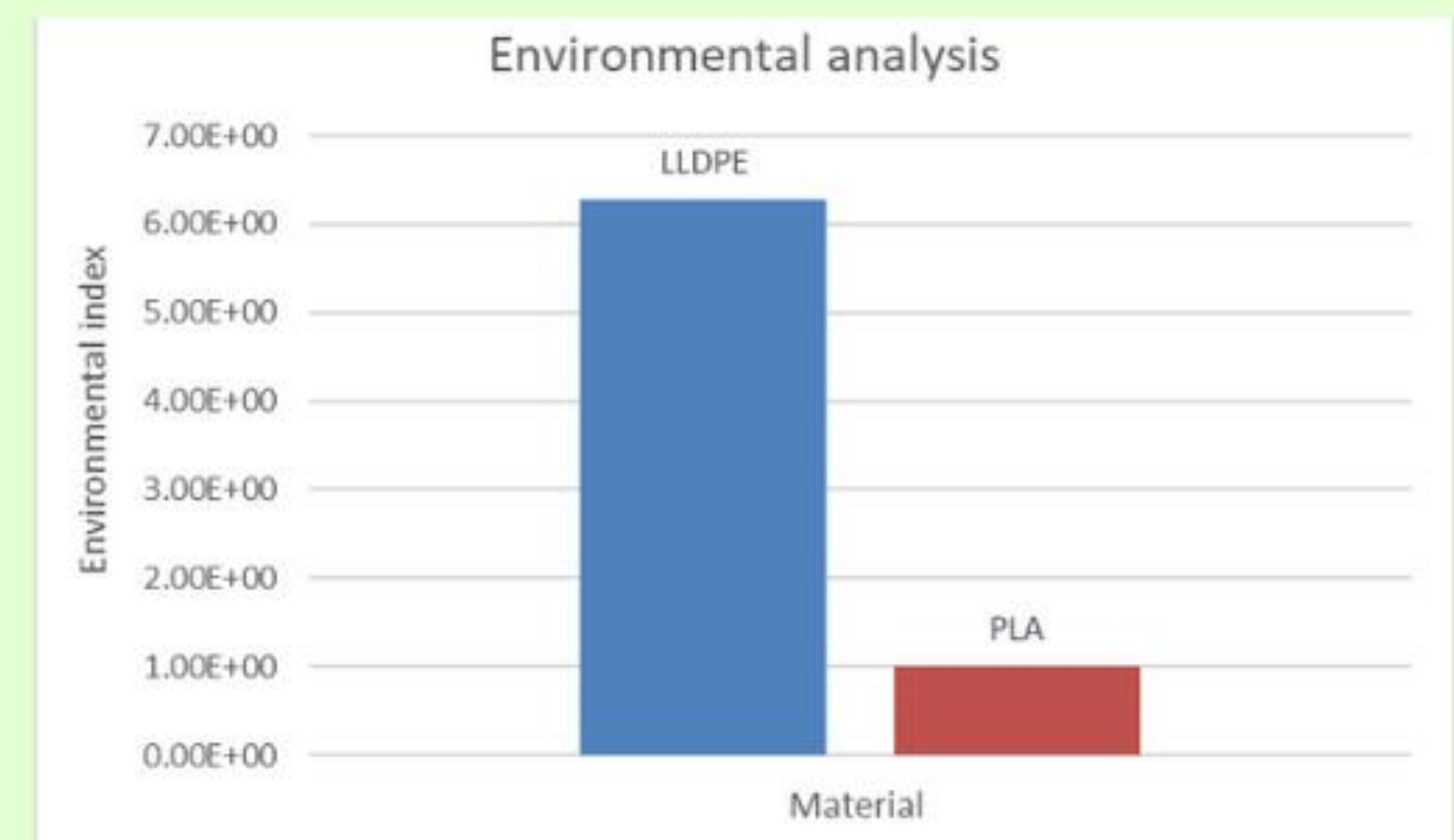
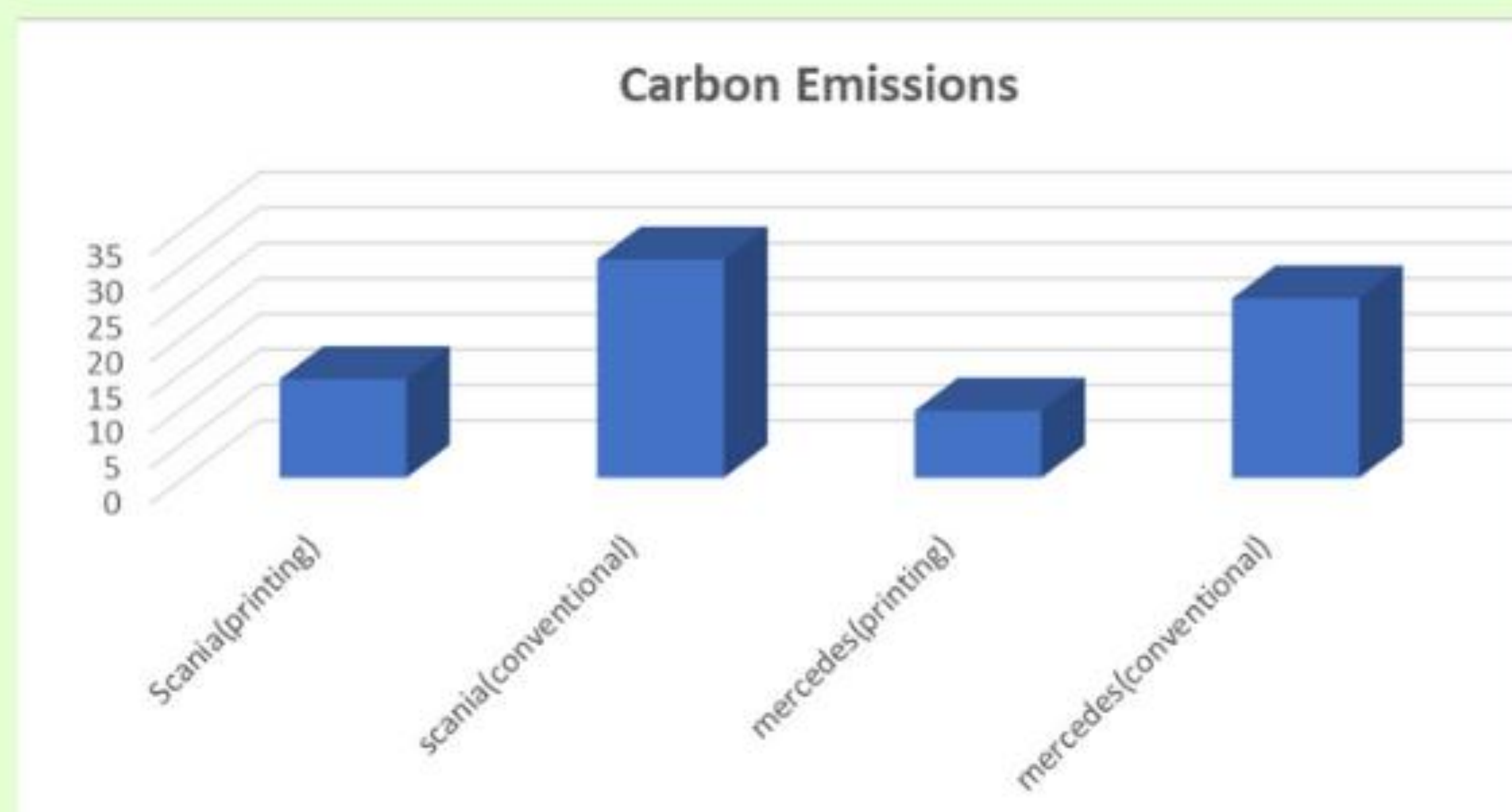


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Final model

## LCA



## CHALLENGES

- Identifying parts and finding suitable time slots.
- Re-designing to fulfill the product requirement.

## RESULTS

- Functional 3D printed products were designed.
- A material study was done.
- A Life Cycle Analysis was done.