

# AI-driven CNC machining optimisation software that eliminates chatter

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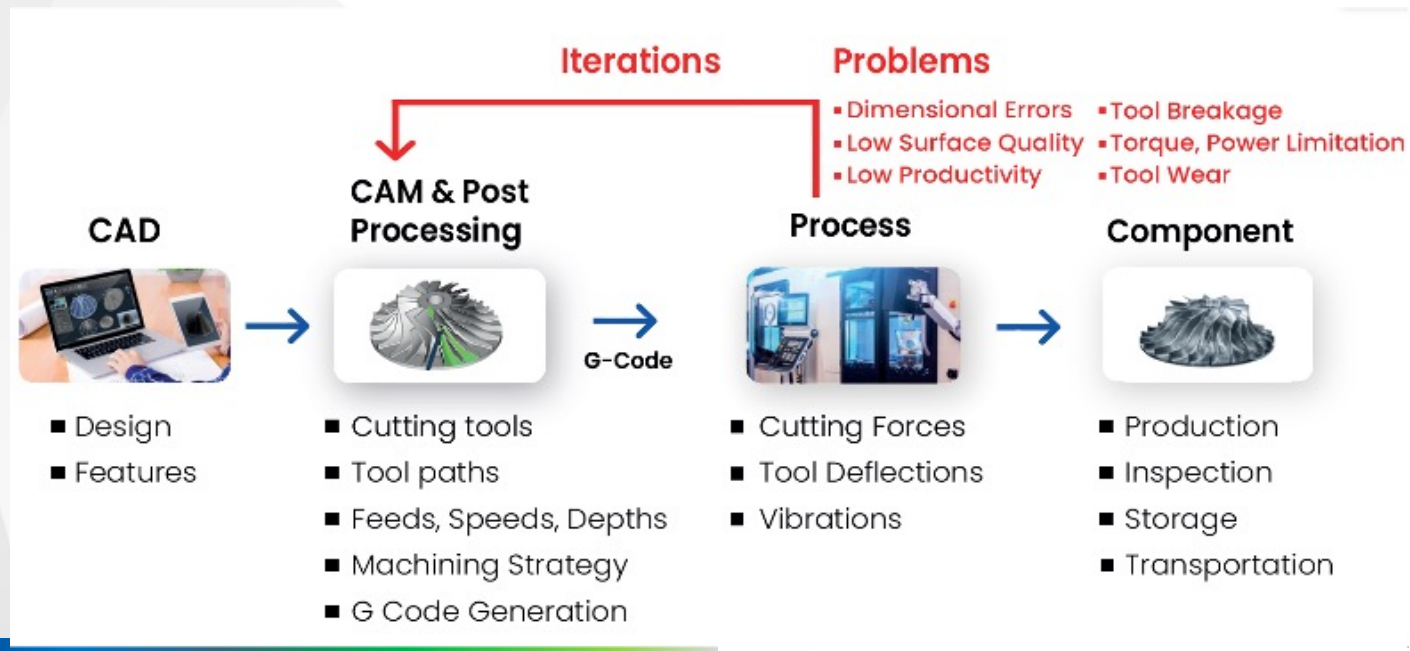
**Productive**  
—■ Machines



SIEMENS

## Everyday reality of CAM programming

- Waste of resources due to trial and errors on machine tools
- Underutilisation of machine tool performance



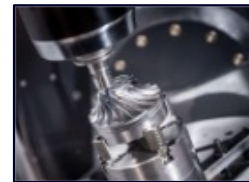
## Solution: Eliminate problems during CAM



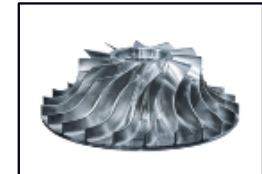
**CAD**



**CAM & Post Processing**



**Machining Process**



**Finished Component**

CAM operations



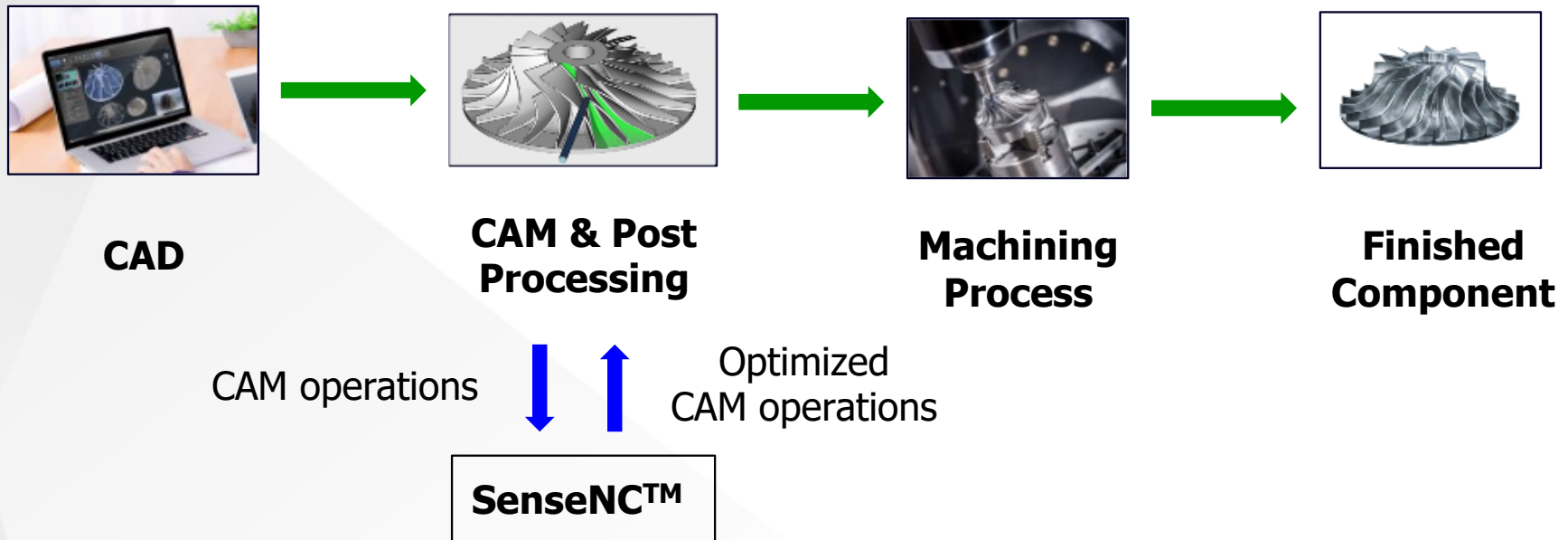
Optimized CAM operations

**SenseNC™**

Optimize Machine tool settings **for the whole toolpath using SenseNC™**

- Spindle speed
- Feed rate

## Solution: Eliminate problems during CAM



Integrated **with Siemens NX CAM** and **Mastercam**. ( Other CAM integrations are on the way)  
Deployed on an on-premise server or on a cloud-based server, fast computation



## Main benefits of SenseNC™ for the manufacturers



Reduced lead times



Reduced costs

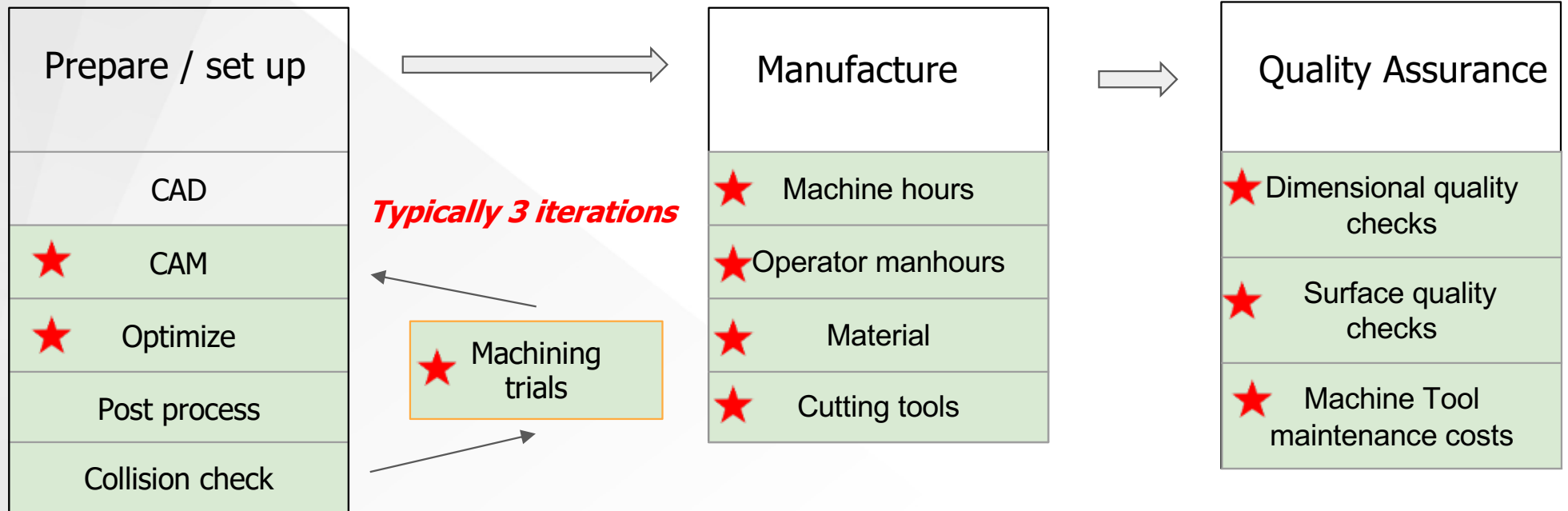


Increased production capacity



Reduced waste

# Cost Impact: £30k-£100k saving per machine tool per year



★ Areas for savings

## SenseNC™ platform

### Feeds

Optimizes feed rates considering physical loading on the tools



### Benefits:

- increased productivity
- avoid tool breakages
- eliminating trial and error iterations

### Finesse

Eliminates chatter vibrations and optimizes both spindle speeds and feed rates.

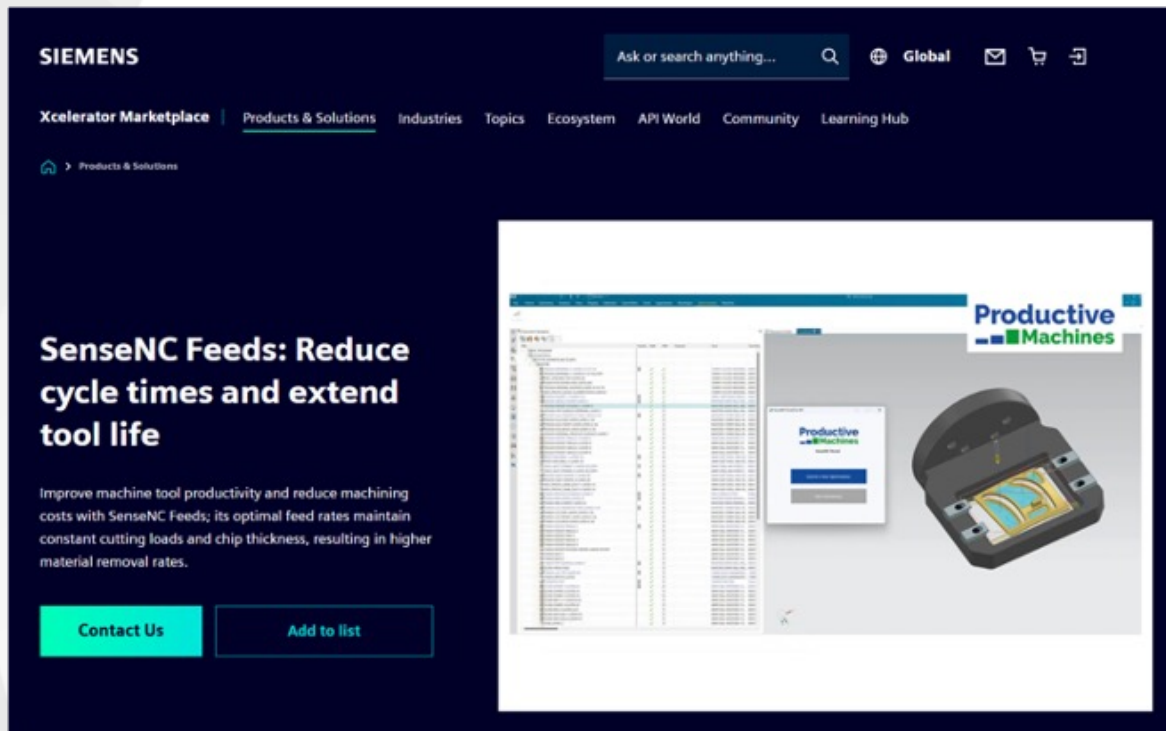


### Additional Benefits:

- more productivity increase
- improved surface quality
- reduced workshop noise

Tap test measurement is needed

# SenseNC™ Feeds at Siemens Marketplace



The screenshot shows the Siemens Marketplace website interface. At the top, the Siemens logo is on the left, and a search bar with the text "Ask or search anything..." is in the center. To the right of the search bar are icons for "Global", email, shopping cart, and a share icon. Below the search bar is a navigation menu with links for "Xcelerator Marketplace", "Products & Solutions", "Industries", "Topics", "Ecosystem", "API World", "Community", and "Learning Hub". The "Products & Solutions" link is highlighted. Below the navigation menu, there is a breadcrumb trail: "Products & Solutions". The main content area features a large heading: "SenseNC Feeds: Reduce cycle times and extend tool life". Below this heading is a paragraph of text: "Improve machine tool productivity and reduce machining costs with SenseNC Feeds; its optimal feed rates maintain constant cutting loads and chip thickness, resulting in higher material removal rates." At the bottom of this text block are two buttons: "Contact Us" and "Add to list". To the right of the text is a product image showing a software interface with a table of data, a "Productive Machines" logo, and a physical device (likely a tool holder or sensor) with a yellow and blue display.



## Effect of SenseNC™ Finesse on the workshop

Original



Spindle Speed: 5968 RPM  
Feed Rate: 822 mm/min

Optimized

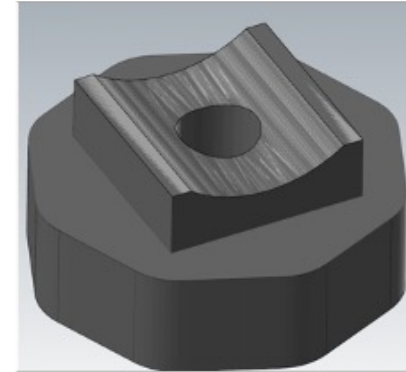


Spindle Speed: 10200 RPM  
Feed Rate: 2576 mm/min

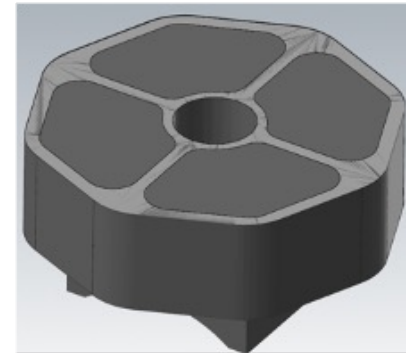
## Case study

- Machine tool: DMU 60
- Tool holder: Sandvik Coromant CoroChuck 930 with Capto C5 backend
- Tools: Sandvik Coromant
  - 1P260-1600-XA 1620
  - 1B230-1200-XA 1630
  - 1P260-1000-XA 1620
- Workpiece material: Aluminium AL6061
- Clamping: Standard vice
- CAM software: Mastercam

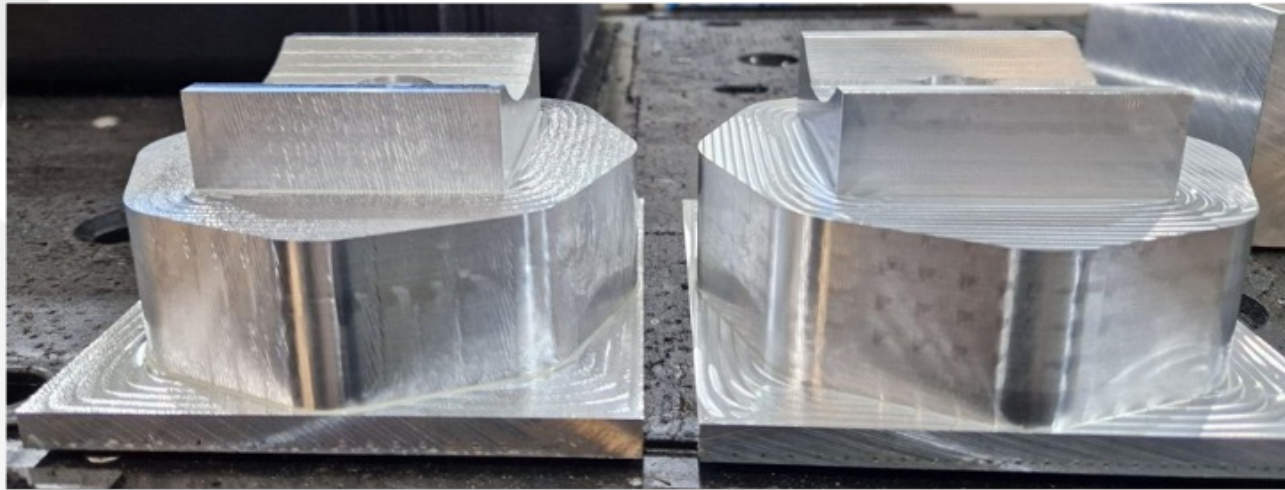
Setup 1



Setup 2

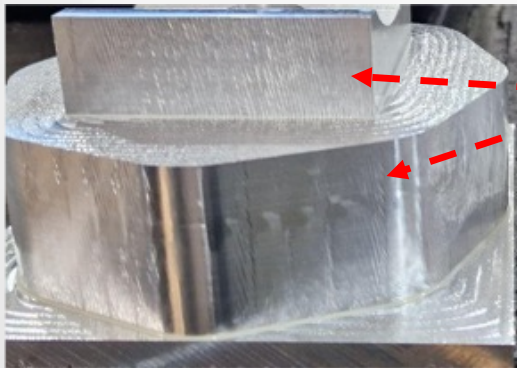


# Case study



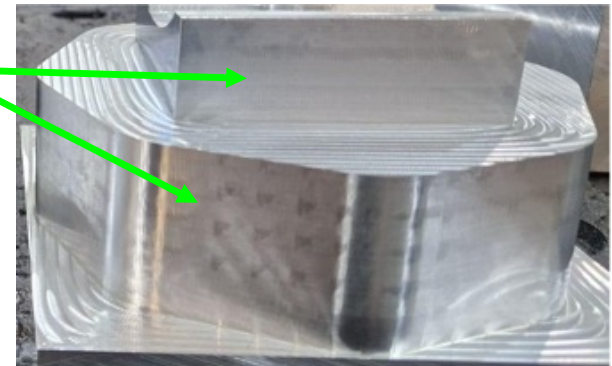
Reference part

SenseNC Finesse  
optimised part

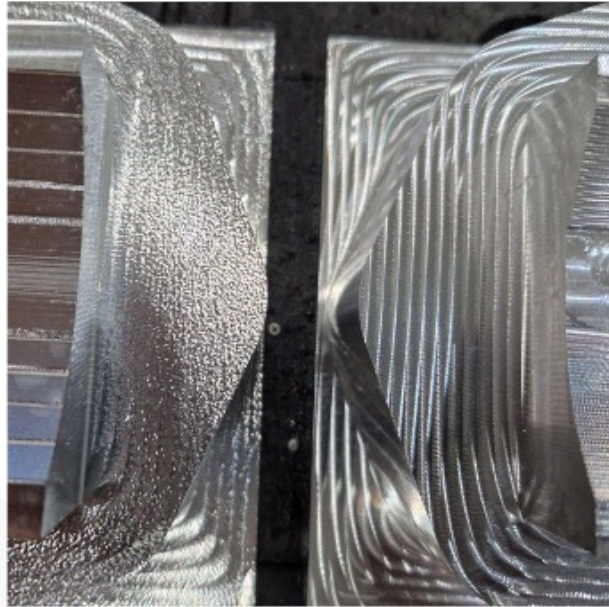


Chatter marks

No chatter  
marks



# Case study



Reference part

SenseNC Finesse optimised part



Rough finish

Smooth finish





## **Example Production Impact**

**Aerospace company in Turkiye applied SenseNC Finesse in production of a structural part in aerospace**

**18-37% cycle time reduction translating to a considerable production capacity increase**

**Impact on production of a structural part in aerospace**

**Applied to 330 parts saving 330 hours production capacity in a few months**

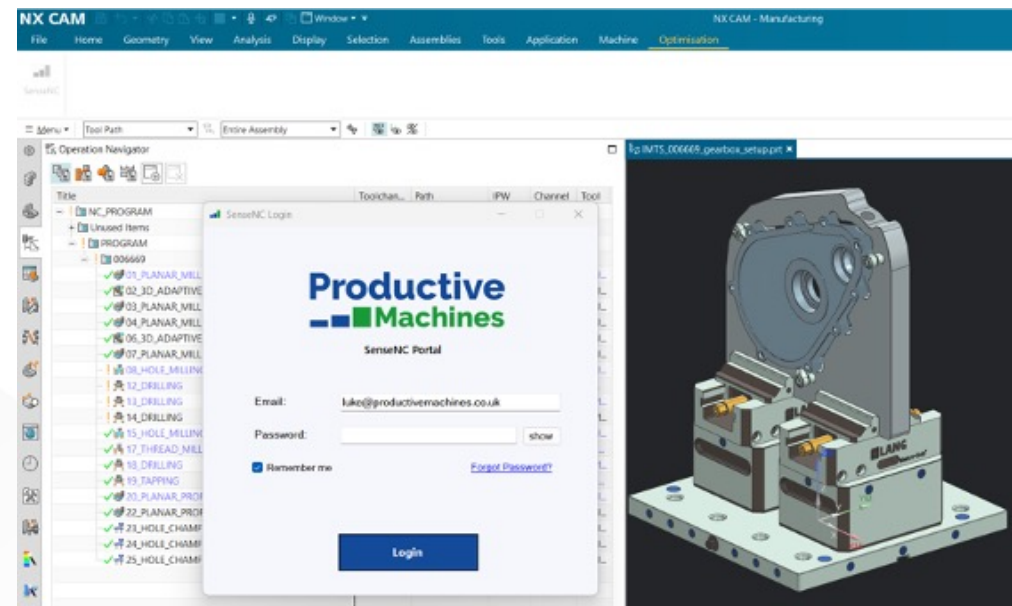
# SenseNC™, Autonomous Milling Optimization in NX CAM

**Reduce your lead times** by eliminating iterations on the machine tools

**Reduce your machining costs** by using optimum feeds and speeds

**Increase production capacity** by using maximum potential of your machine tool system

**Improve part quality** by mitigating process physics related problems at the CAM stage



**Thank you for your attention!**

**Productive  
Machines**

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