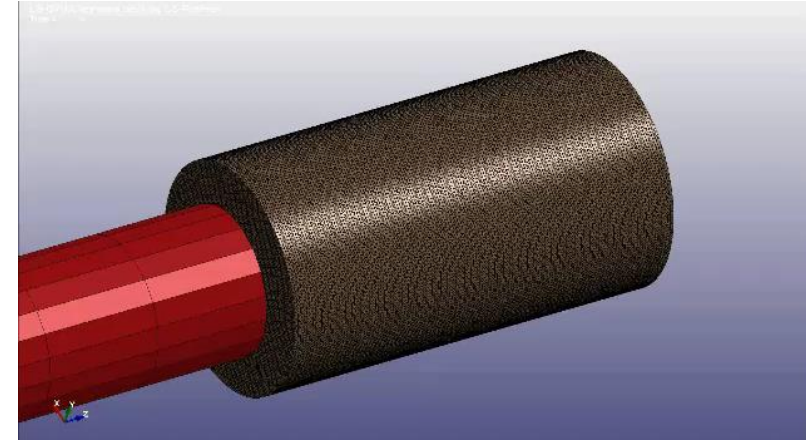


## [High Efficient Drilling]

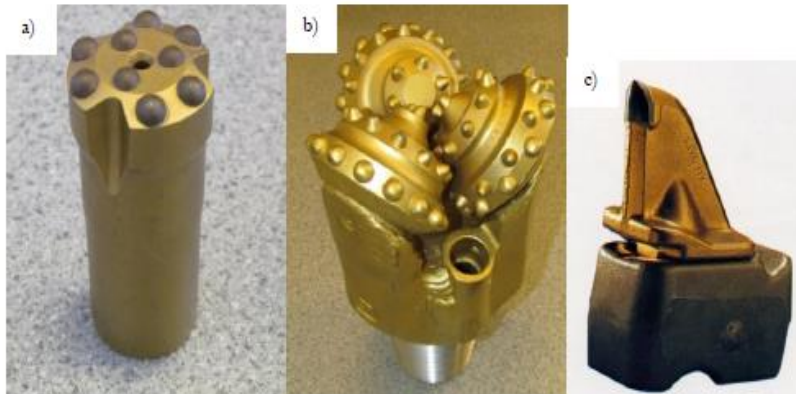
- Thematic Area: **Minning** /Activity: **Up-scaling**/ Technology/Topic of focus : **Drilling / rock fracture FE modelling / tool performance / maintenance costs**:
  - Optimizing drilling parameters though FE modelling aimed at high rate of penetration
  - Improving tool performance through customized material selection and material development
- Expected synergies and complementarities:  
LTU (modelling) & CTM (experimental) = > transfer to mining /drilling / tool maker companies
- Outcomes:
  - Customization of drilling parameters and tools to different types of rocks and grounds
  - Reduction of drilling time, tool maintenance tasks and tool costs
- Market & Business opportunities:
  - Drilling adapted to non-favourable geological conditions (artic mining, urban locations...)
  - Improve drilling efficiency: reduction 10-20% drilling time, reduction vibration levels, improve tool performance (50% less abrasive wear, 20% less chipping/spalling)
- Partners already identified:  
LTU (NCLC), CTM-GCCC (SCLC)
- Wanted additional partners :  
Mining company, tool developer, tooling material developer, drilling company

# [High Efficient Drilling]

## FRACTURE MODELLING



## TOOL PERFORMANCE



Drill bits for a) rotary-percussive drilling, b) rotary crushing drilling and c) cutting drilling

- Drilling adapted to non-favourable geological conditions (artic mining, urban locations...)
- Improve drilling efficiency:
  - reduction 10-20% drilling time
  - reduction vibration levels
  - improve tool performance (50% less abrasive wear, 20% less chipping/spalling)