

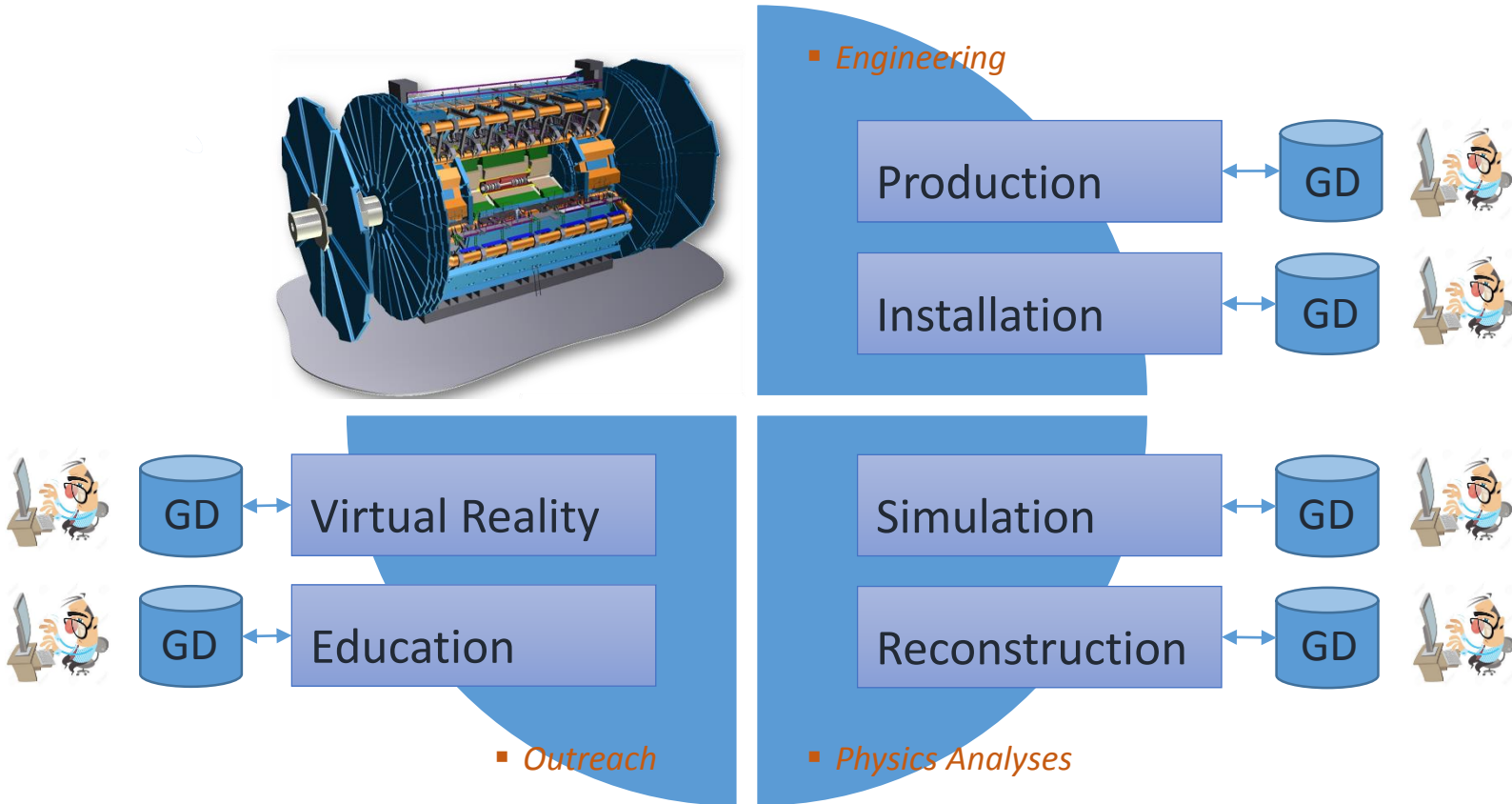
# New Approach for ATLAS Geometry Modelling

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# Current Approach

## ■ Heterogeneous Geometry Modelling



# Why it is bad?

## REASON#01: Requires huge resources

- High qualified manpower, group of experts employed for a long term
- TCn case study for development of CATIA descriptions – 31 months, 13'000man/hour, payed 172'000CHF

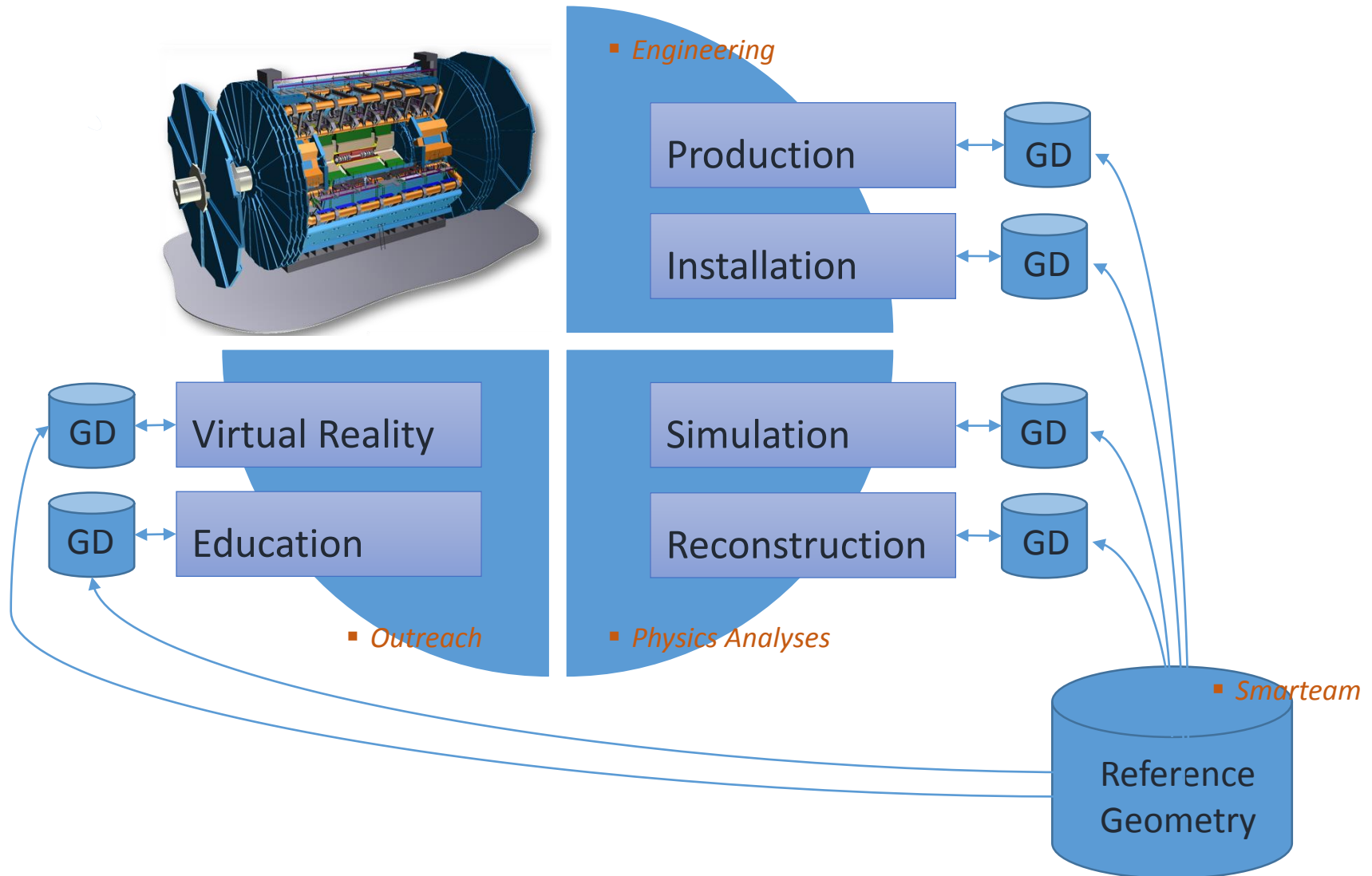
## REASON#02: Inaccurate and non-synchronized

- Data-vs-MC discrepancies. New methodology in 2010 (Laurent Chevalier, Andrea Dell'Acqua, Jochen Meyer) for Geant-4 compare analyses
- 7 volumes have been checked: Coils-12%; ECT-34%; HF Trucks-67%; MDT-41%; TGC1/2-53%; TGC3-45%; ECT Tower-32%

## REASON#03: Hard to update

# New Proposal

## ■ Heredity Geometry Modelling (HGM)



# Project Details

- Who will be users? Groups who are responsible for development of software applications for Physics analyses, Outreach and Engineering
- Reference Geometry – should be 3D CAD models in the official CERN Database which is Smarteam
- *Two* general phases foresee: 1<sup>st</sup> Phase – Development of reference geometry database on Smarteam (~1 year); 2<sup>nd</sup> Phase – Development of tools and procedures for transformation of descriptions from Smarteam database (~1.5 year)
- ATLAS already have stuff for this project
- Same concept will be valid for other experiments and HEP projects

Thanks!