

# *General Structure of TransAT*

*The new art of simulating complex & multiphase flows*

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TransAT

*ASCOMP* →

*TransAT- applications* →

*TransAT - technology* →

*Architecture, Physics,  
Algorithms* →



- Thermal Hydraulics in Nuclear Technology
- Oil and Gas transport and exploration
- Chemical engineering
- Microfluidics
- Coastal engineering
- Aerodynamics
- Hydrodynamics
- Wind engineering

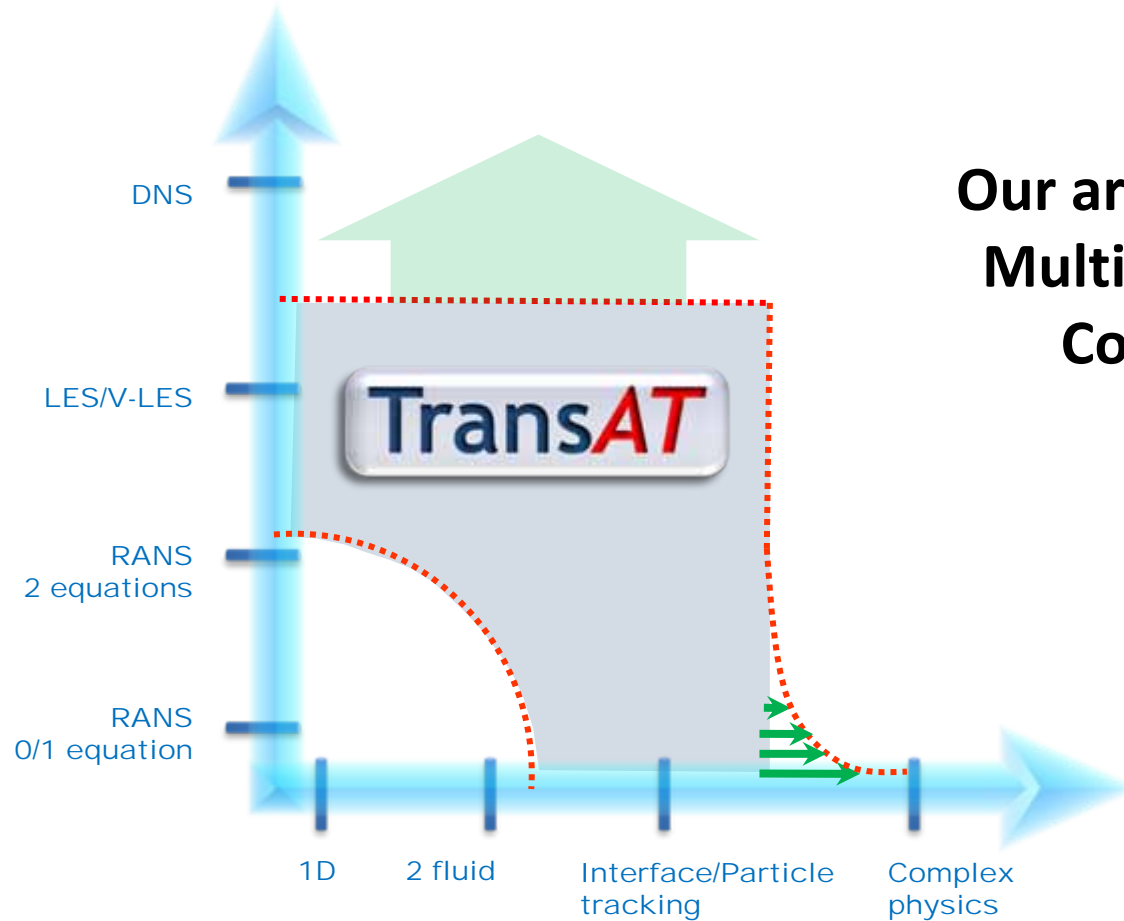
- Novel features
- Architecture
- Physics
- Algorithmics

TransAT  
*mesh*

TransAT  
*input*

TransAT

## TURBULENCE



**Our area of Excellence:  
Multiphase Flow and  
Complex Fluids**

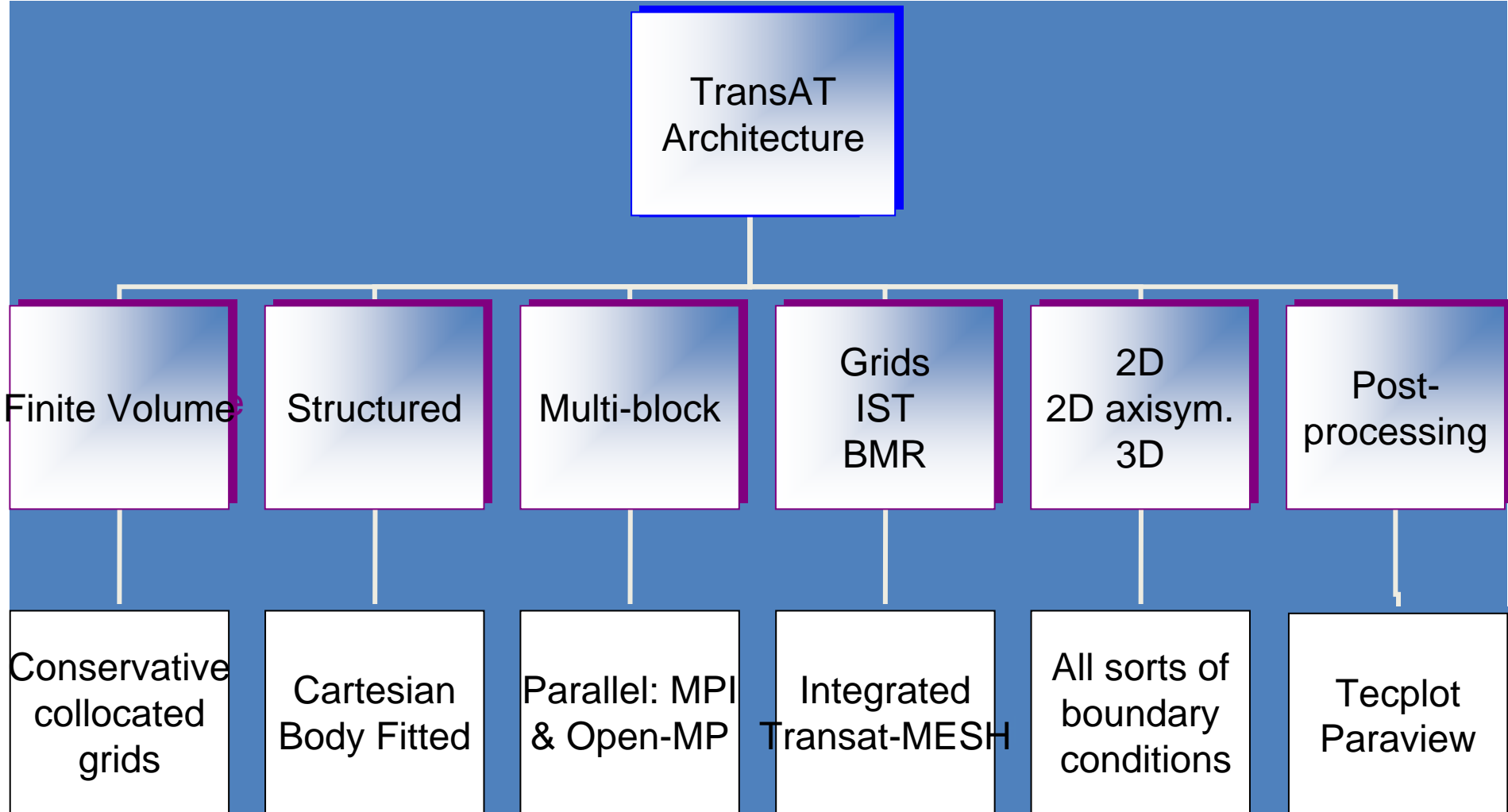
**MULTIPHASE  
STRUCTURE**

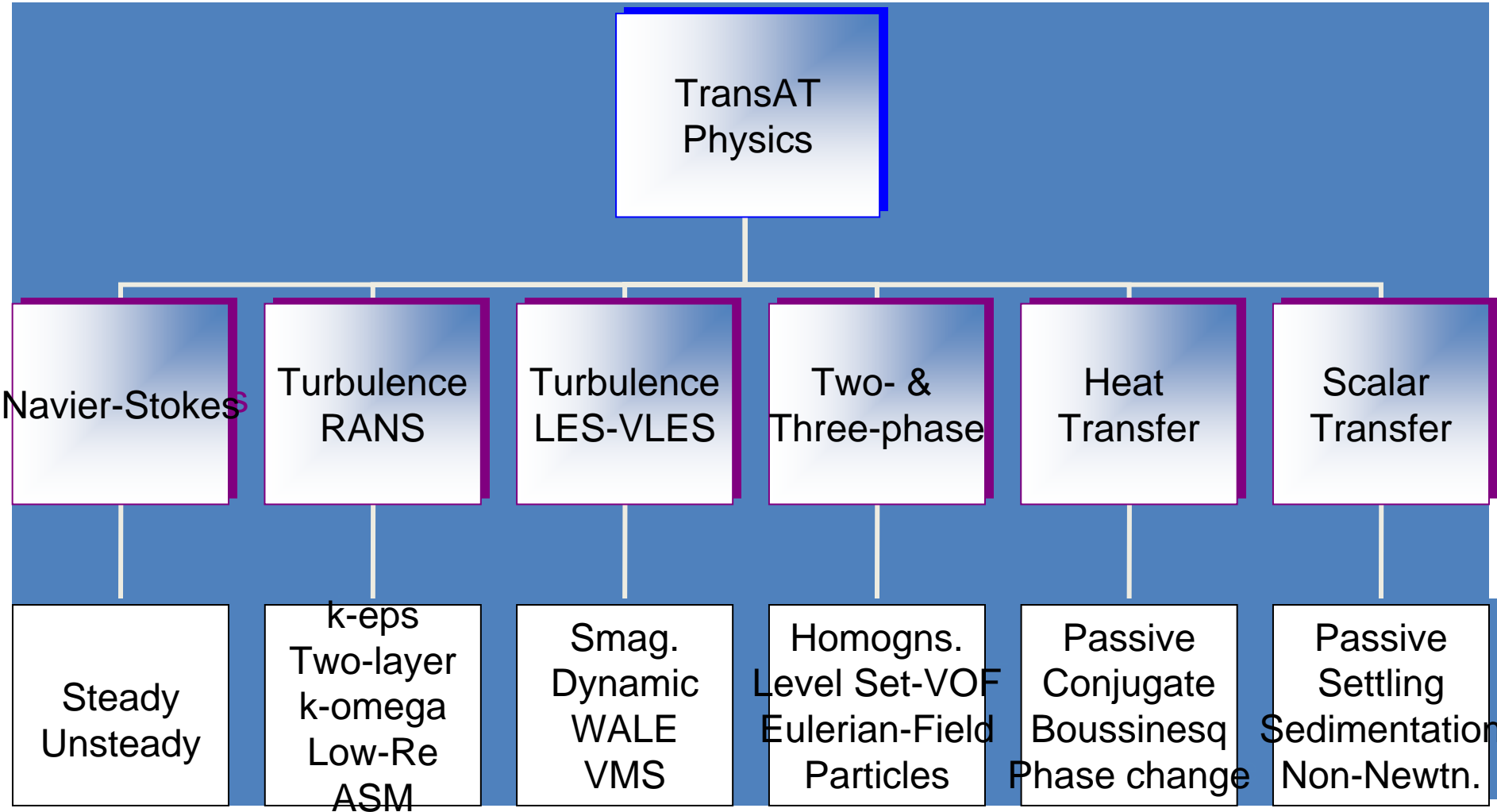
**ASCOMP**

...connecting science and technology



- TransAT uses the so-called Immersed Surfaces Technology (IST), enabling the representation of complex configurations (via STL CAD files).
- TransAT uses Block-based Mesh Refinement (BMR), for grid refinement in specific blocks.
- TransAT uses Adaptive Mesh Refinement (AMR) around moving fluid-fluid interfaces.







TransAT Algorithms

Incompressible

Weakly compressible

Convection & time schemes

Interface Tracking schemes

Pressure solver

Projection  
Implicit  
Explicit

Karki-Patankar  
density-based

HLPA  
QUICK, TVD  
Adams-Bashfth  
Runge-Kutta

WENO  
ENO  
AMR

GMRES &  
Multi-grid  
SAMG

# Thank you !

For more information  
please contact us at

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