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- Domain description and current situation
- TINA results (demonstration)
- Conclusion

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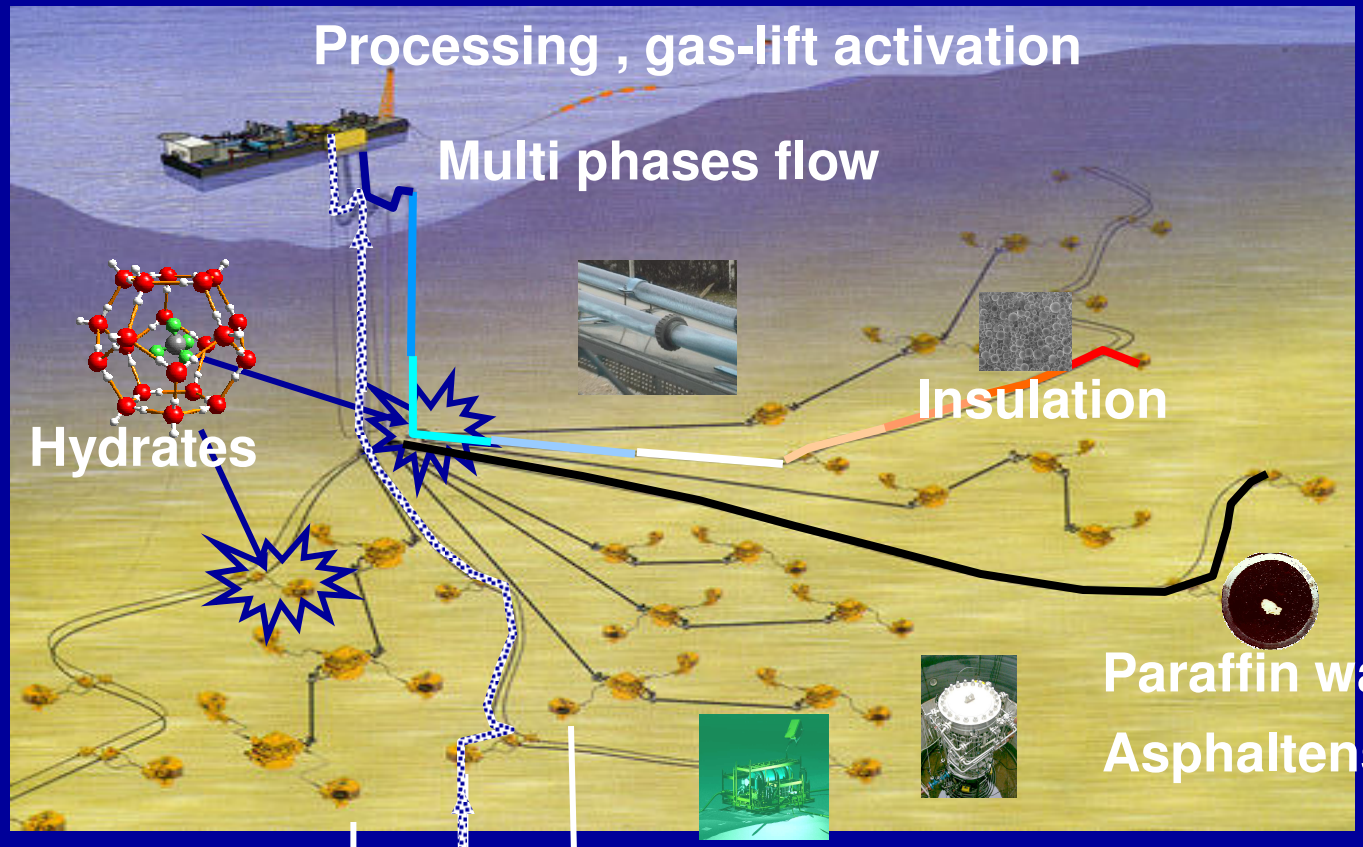
Domain description & flow assurance issues



Damage

Sand arrival

Pumping

Separation

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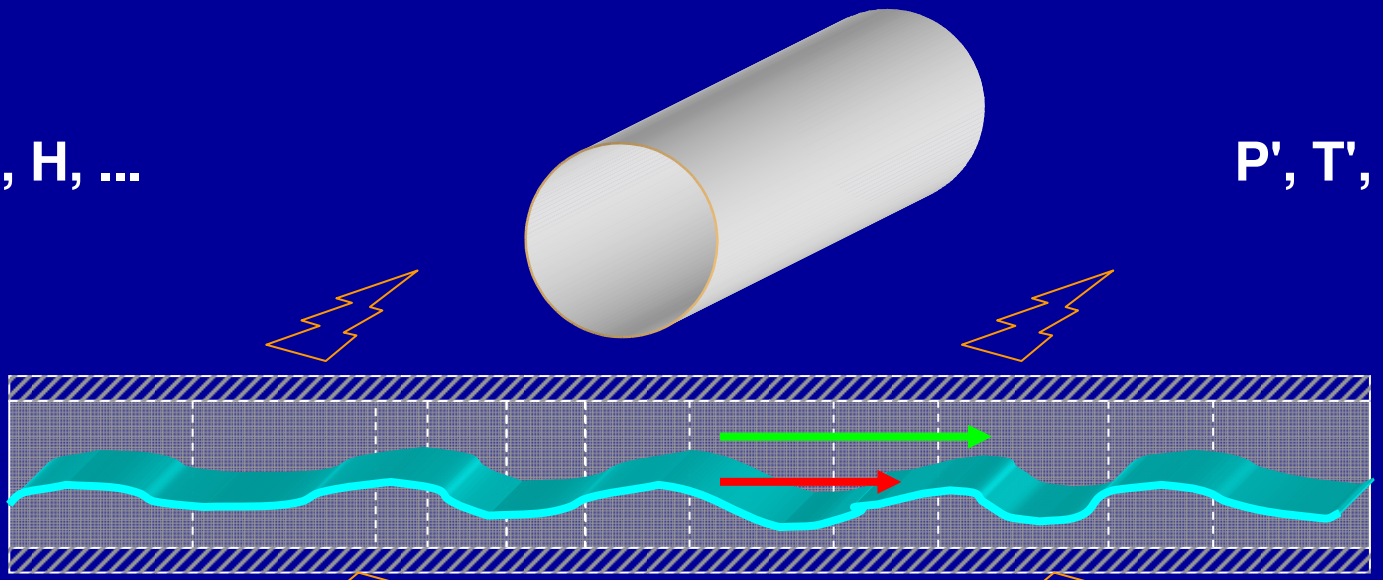
- Demonstration description
  - Application case:
    - Deep water production system (based on a real field case).
    - 5 wells and subsea chokes, 2 subsea lines, 1 production riser, simple topside facilities (for gas lift production)
    - flowsheet is composed of native Indiss unit operations and IFP CAPE-OPEN Pipes
  - Fluid representation & thermodynamics:
    - 15 chemical compounds including petroleum cuts and water
    - Indiss native thermo and Multiflash CAPE-OPEN thermo (PR)
  - Scenario:
    - Compute steady state flow characteristic in the network according to production constraints (WC, GOR, arrival pressure, ...)

Pipe modelisation

P, T, Z, F, H, ...

P', T', Z', F', H', ...
velocities
....



Mesh + Solver

CO
dynamic & steady state
interfaces

IFP Pipe UO

Thermal transfers

Hydrodynamics

Thermodynamics

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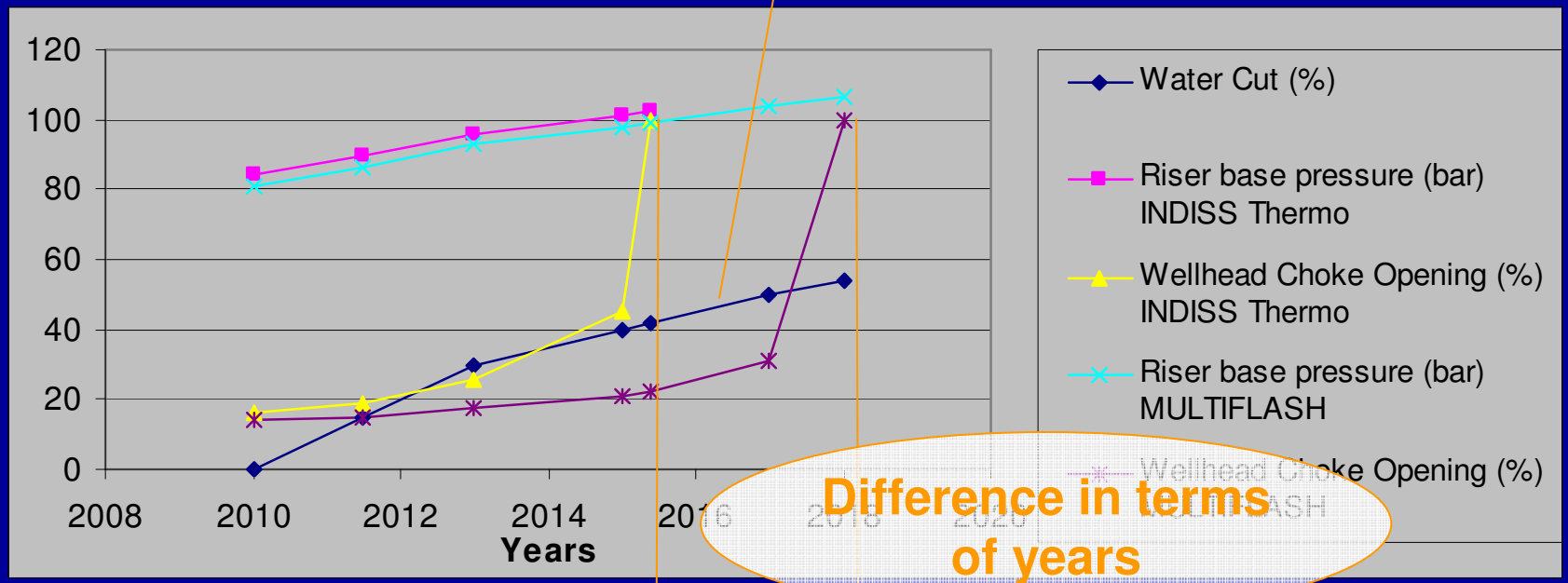
- Demonstration.....

- Results

Increasing water production with time



Difference in terms of years

Natural flow limit estimated with INDISS Thermo

Natural flow limit estimated with MULTIFLASH

- Demonstration conclusions
  - Flow prediction is extremely sensitive to thermodynamic models, fluid representation, ...
  - Production capacity of the system is strongly correlated to thermodynamic calculations
  - User may be able to use / choose the most appropriated thermodynamic package

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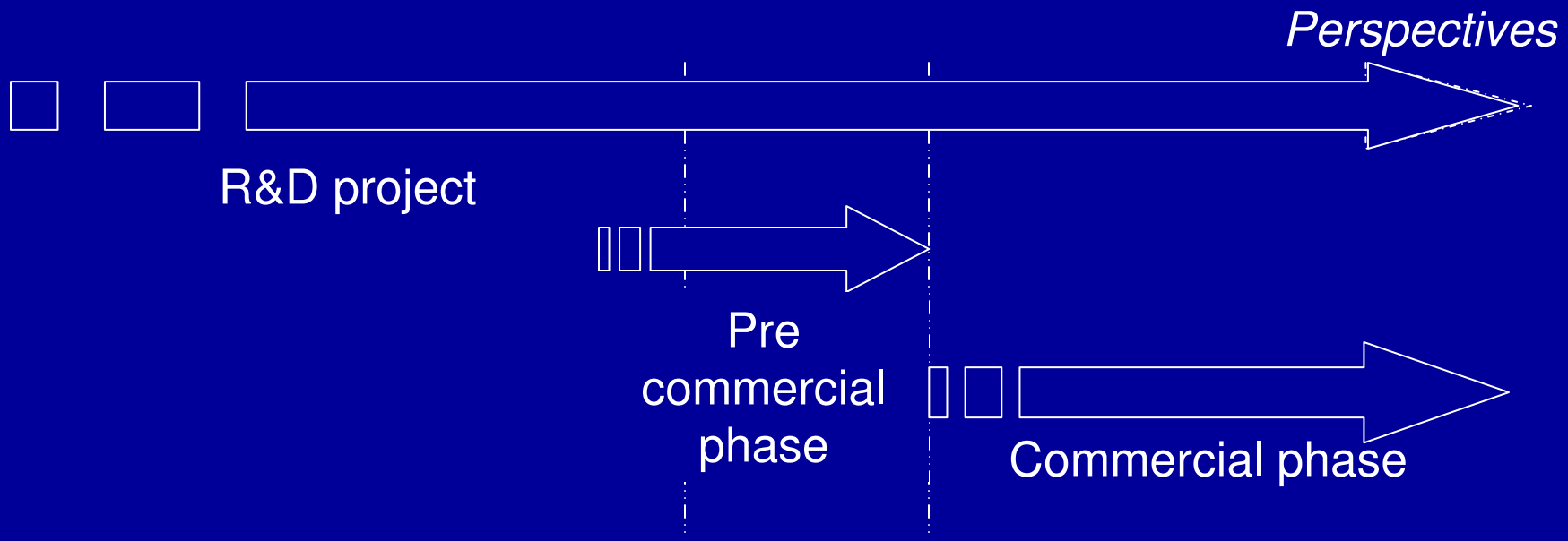

- TINA is a Research collaboration between TOTAL-IFP
- PlaTINA is a industrial and commercial project leads by IFP

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