
CLEANSKY
Clean Sky Technology Evaluator
Warsaw
13 September 2011
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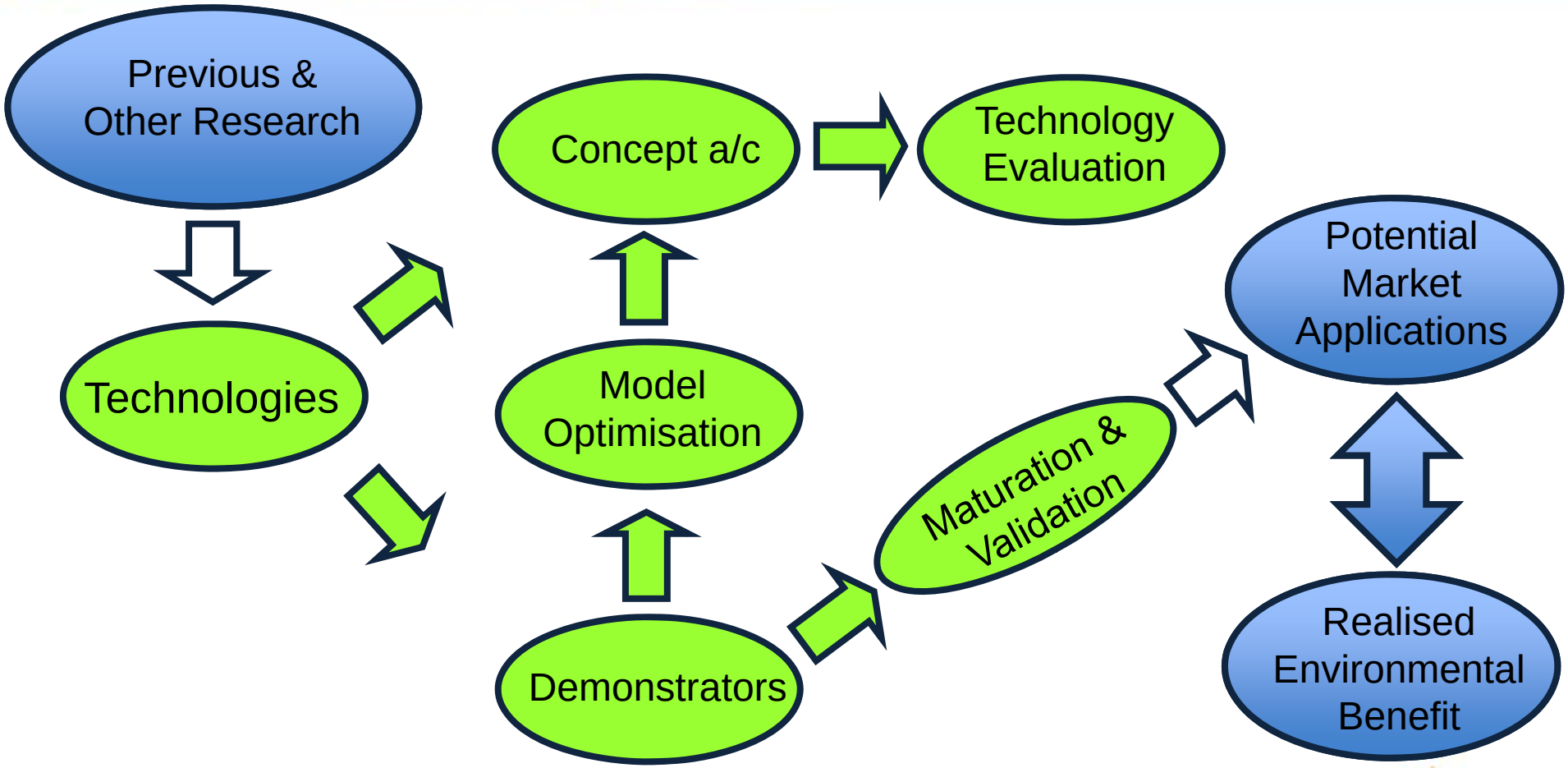
TE within the Clean Sky general scope



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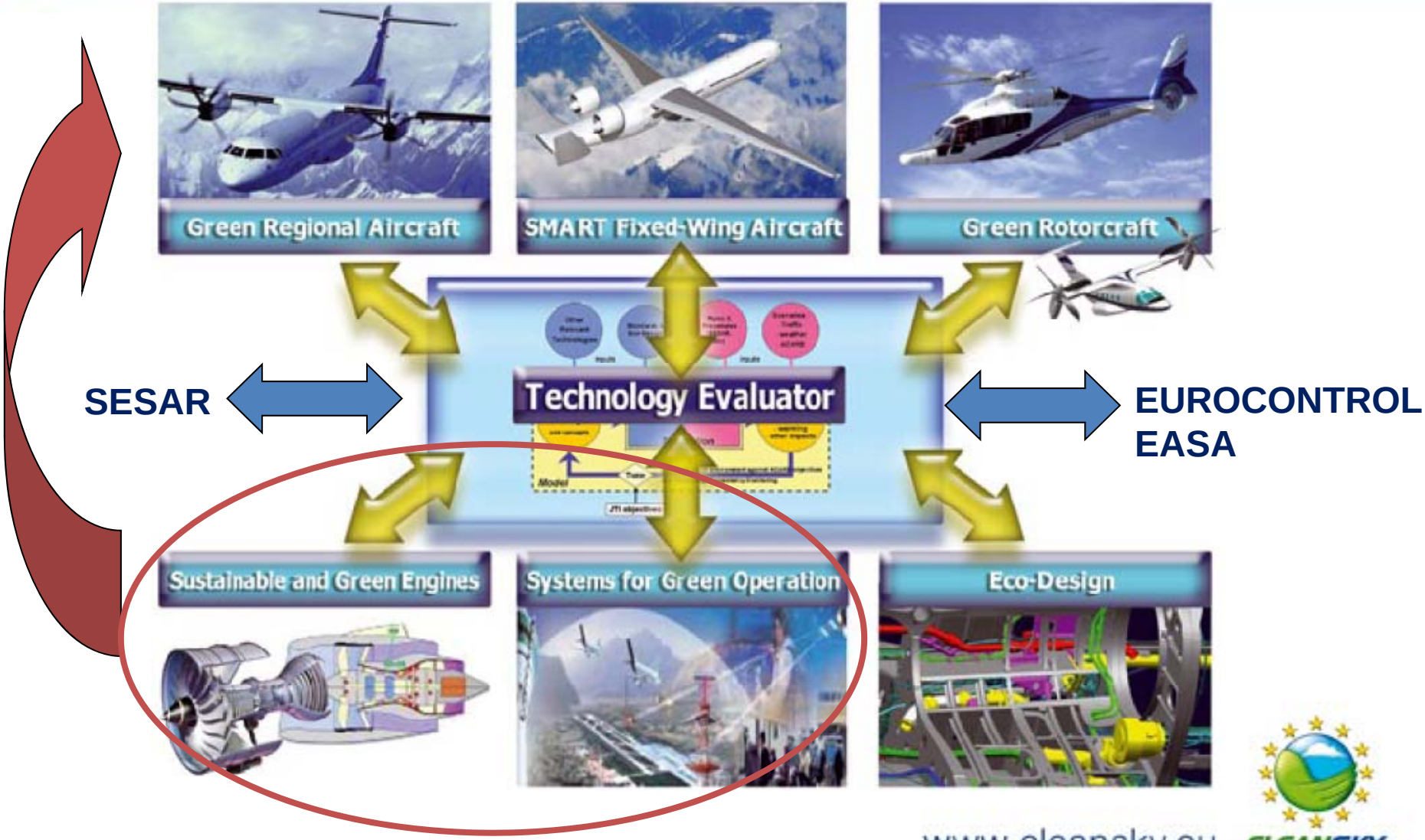
TE, ITDs and external Links



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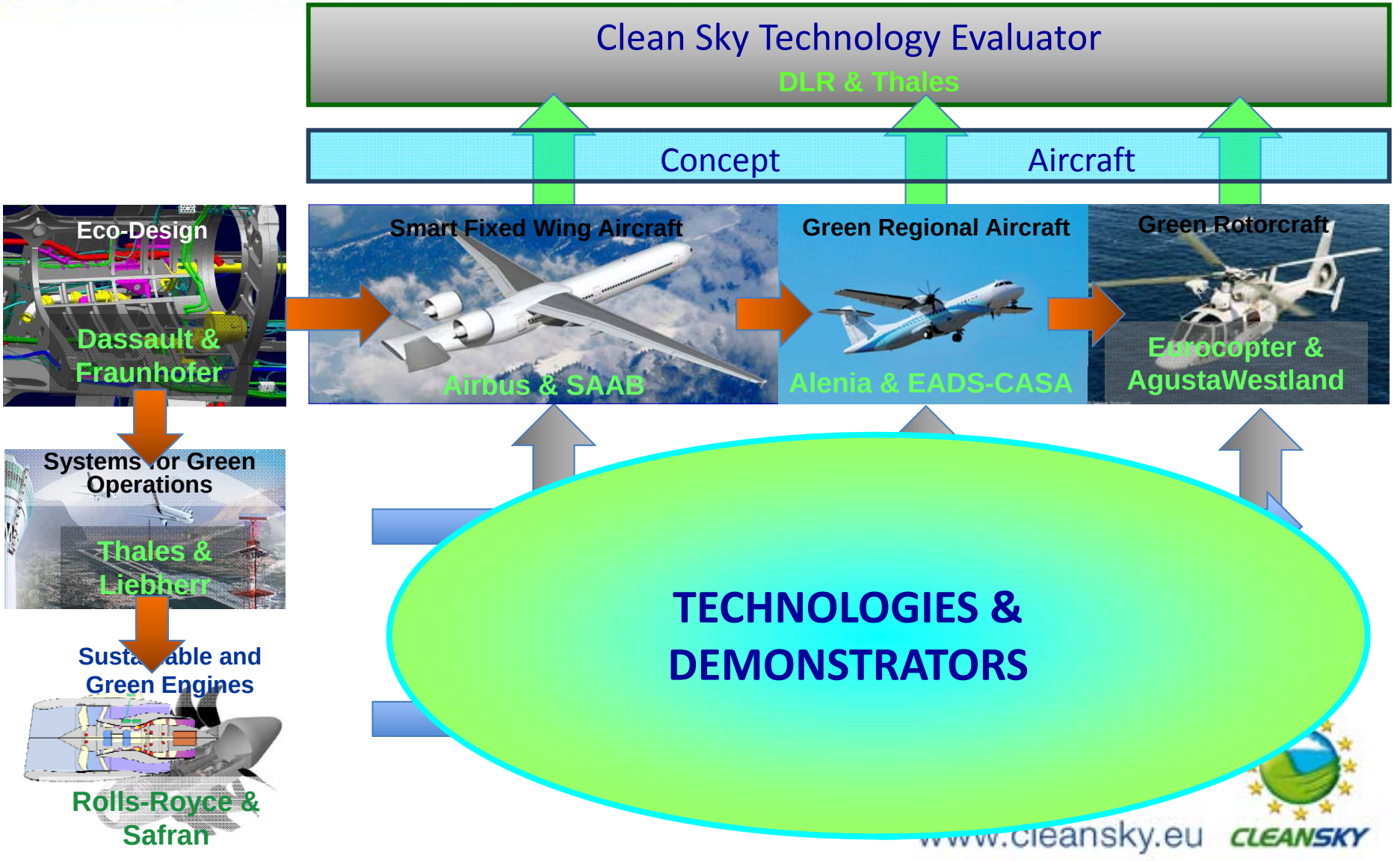
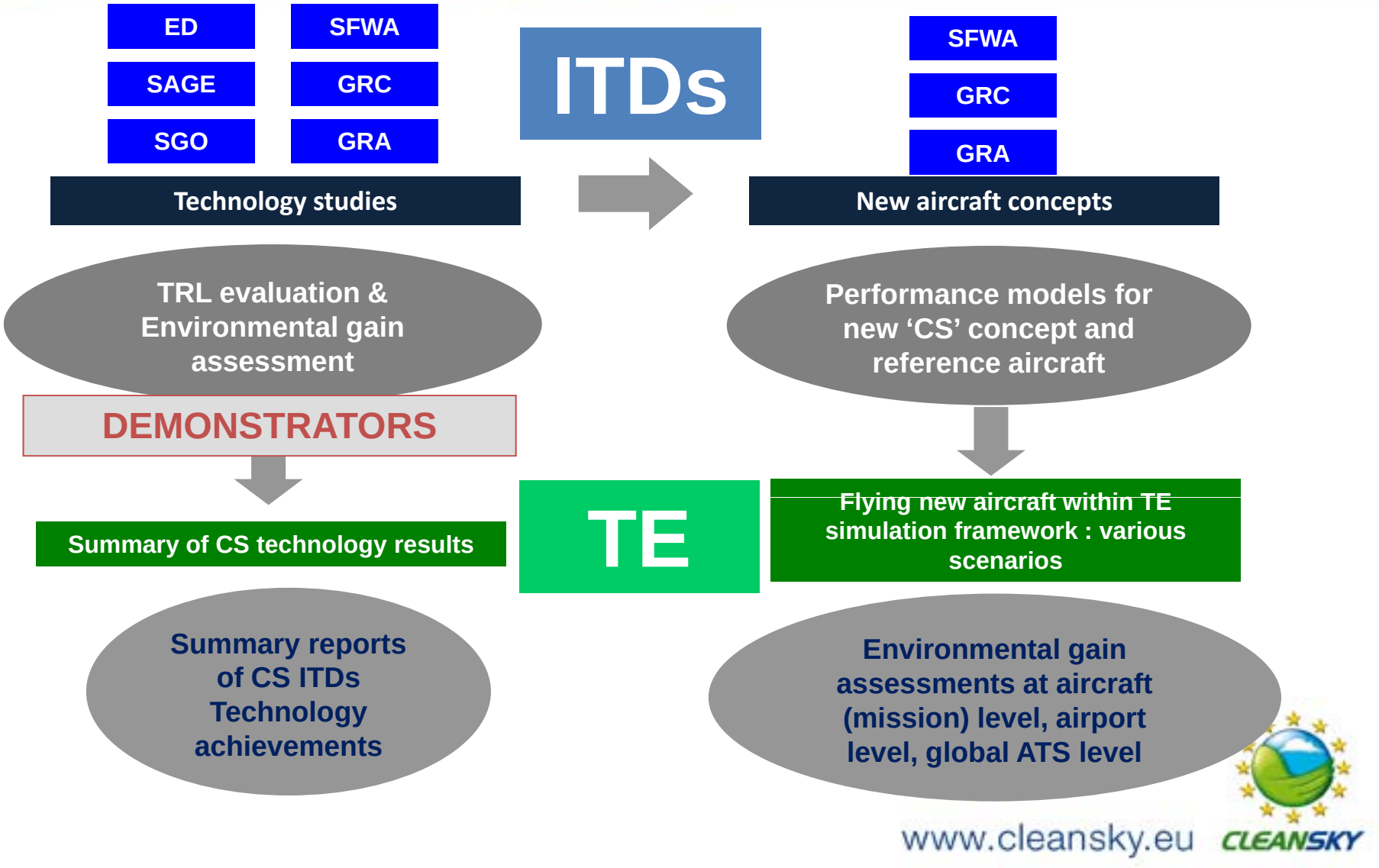
TE general scope

- **TO ASSESS environmental impacts (noise, emissions) of new technologies developed in Clean Sky's ITDs**
  - Technology reports :
    - Collect and update the Environmental targets for every ITD
    - Present the current readiness level reached by every technology studied in the ITDs
    - Integrate the contributions from the different ITDs to guarantee a consistent forecast scenario
  - Global environmental impact assessments
    - At A/C level along a mission (mission level)
    - At airport level (operational level)
    - At global level (ATS level)
  - Trade-off studies (according to ITDs needs)

Principal flow of outputs for TE Assessments

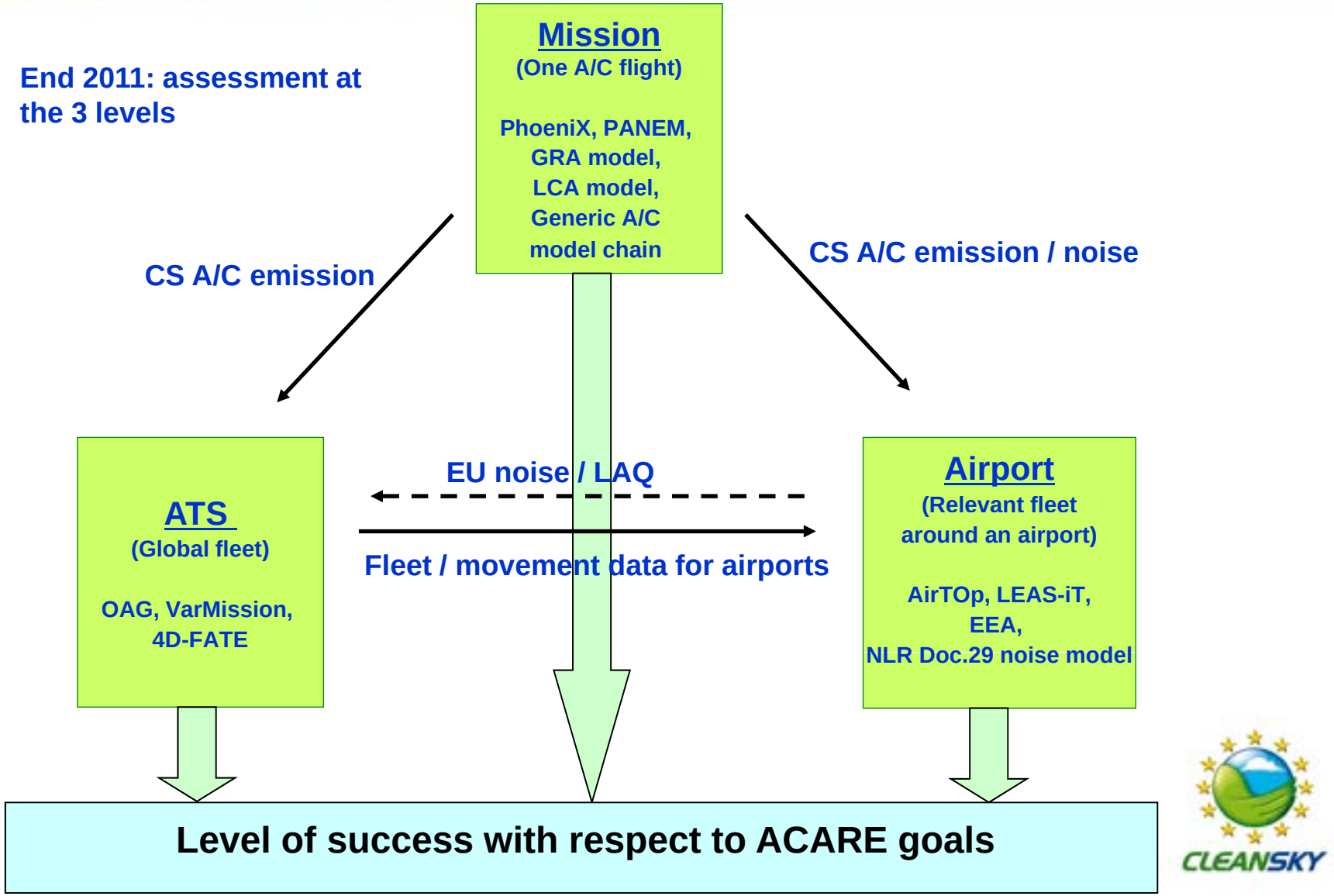


TE Assessments and flow of Data – expanded view

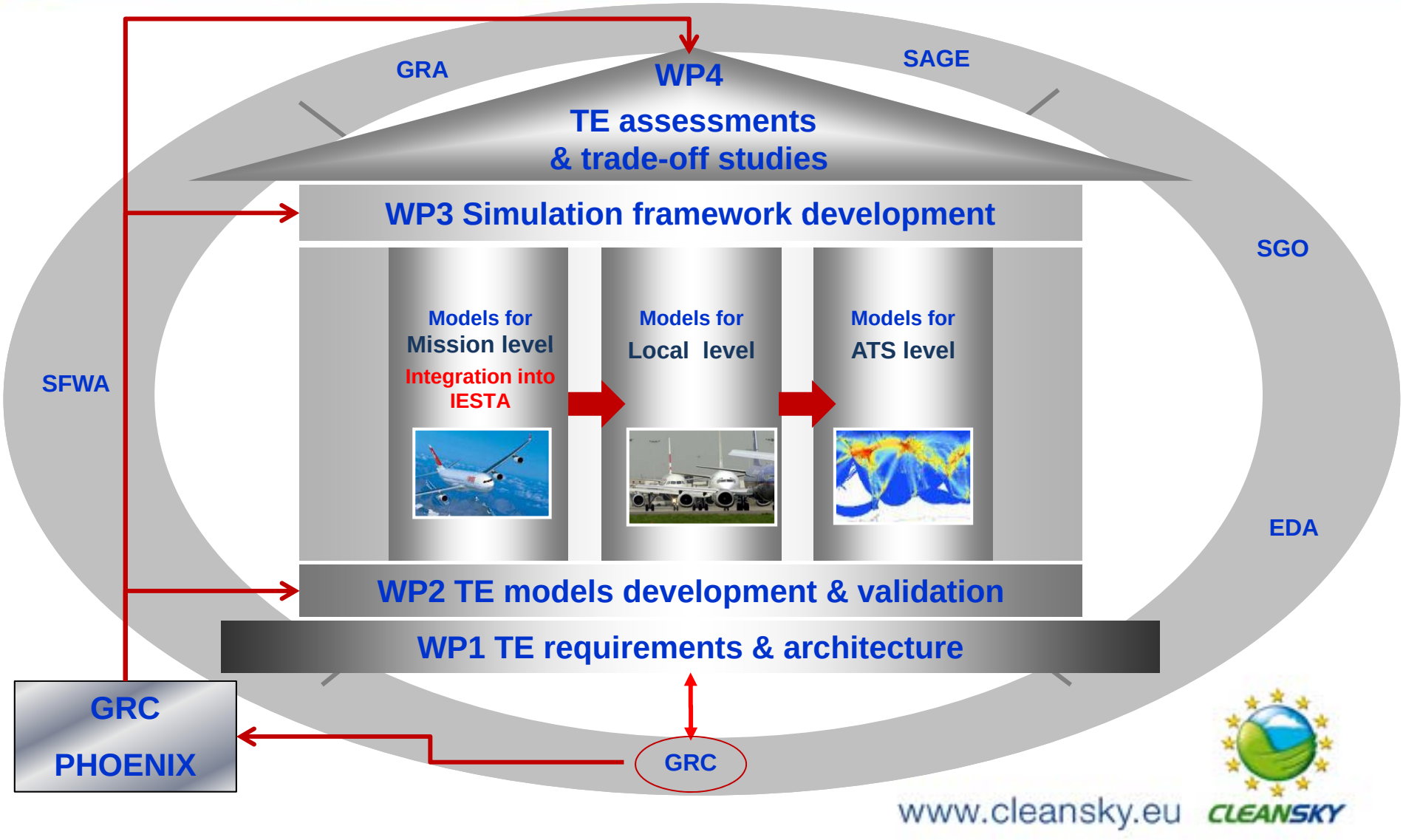


TE 2011 ('Mid-Term') First Assessment

End 2011: assessment at the 3 levels



GRC application mock up



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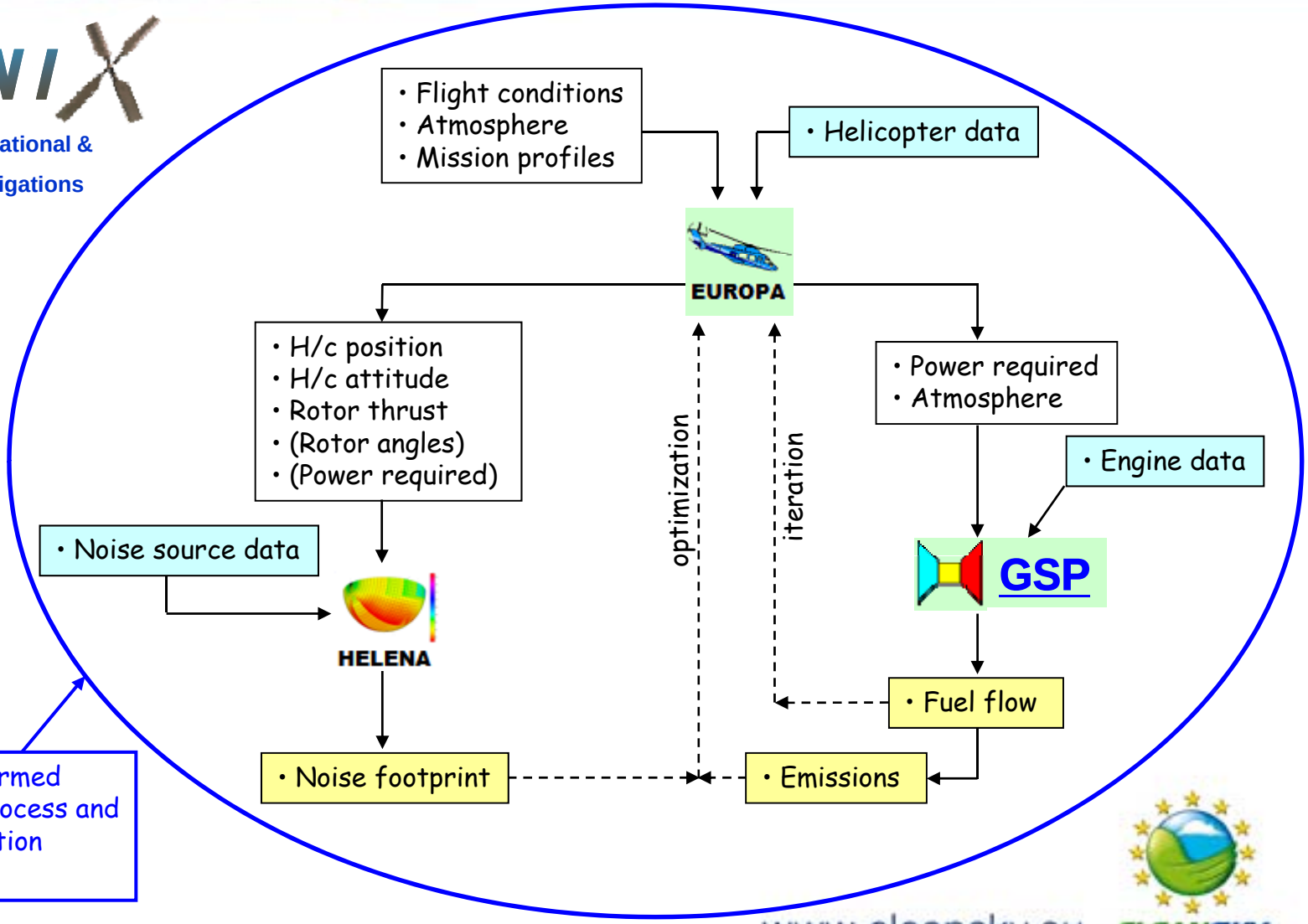
GRC Simulation Framework: Layout

PHOENIX

Platform Hosting Operational & ENvironmental Investigations for Rotorcraft



Code linking performed with OPTIMUS process and simulation integration framework

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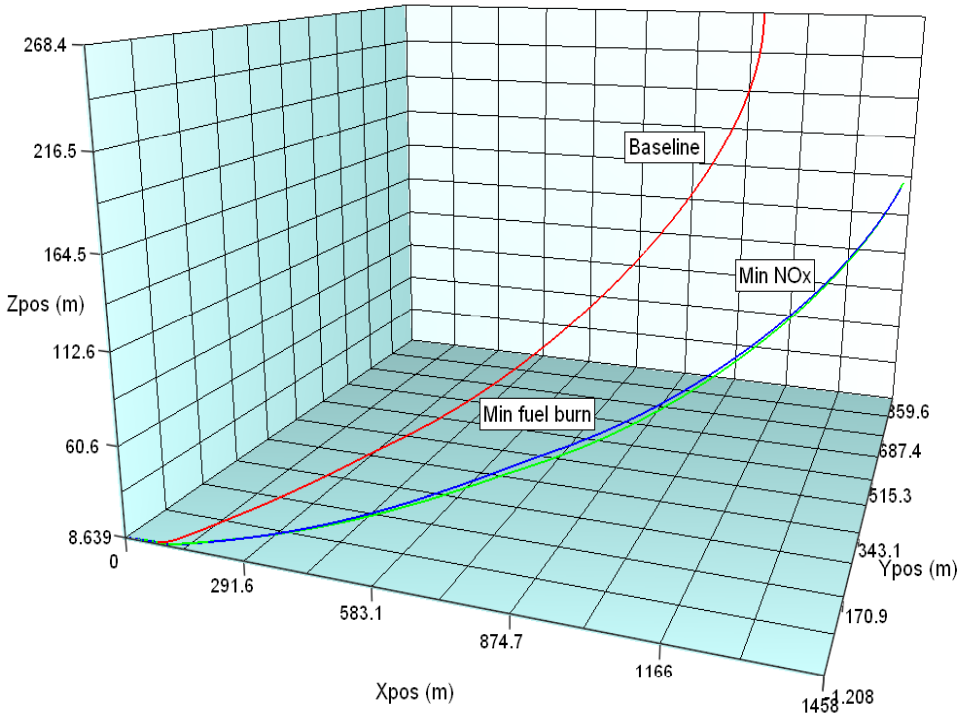
Phoenix Sample Preliminary Results: Trade-off Analysis

Comparative evaluation between calculated mission profiles

PHOENIX

Platform Hosting Operational & ENvironmental Investigations for Rotorcraft

✓Calculated trajectories



✓Quantified improvement achieved

Mission Profiles	Difference in NOx emission (%)	Difference in Fuel burn (%)
Fuel Opt./ Baseline	-17.49	-10.05
NOX Opt./ Baseline	-17.58	-9.77
Fuel Opt./ NOX Opt.	0.10	-0.30

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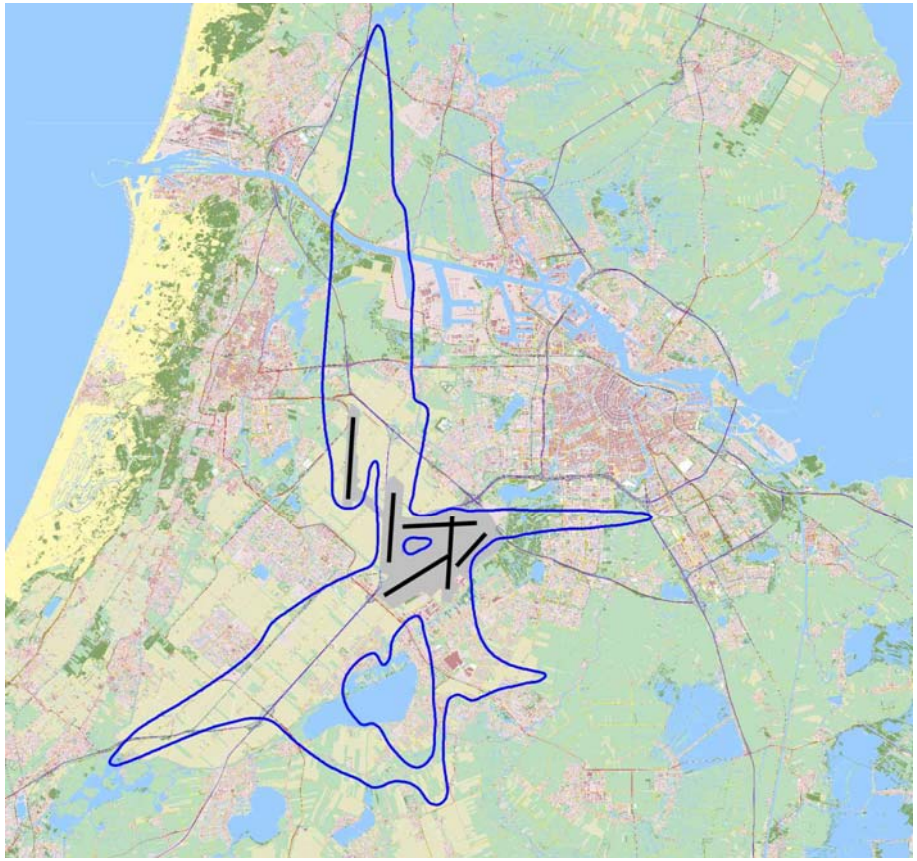
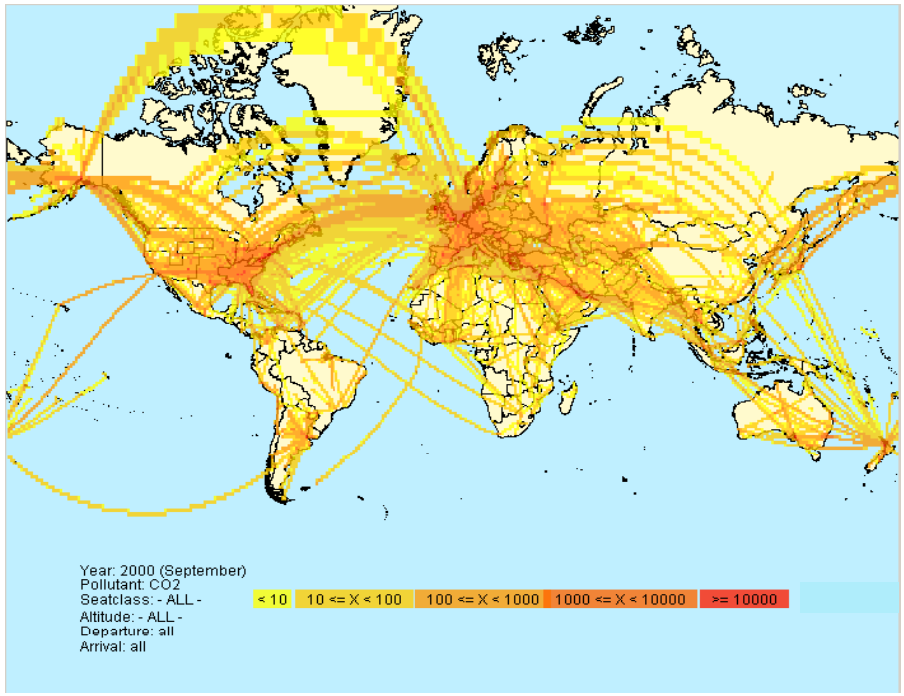
TE Local Level Assessment

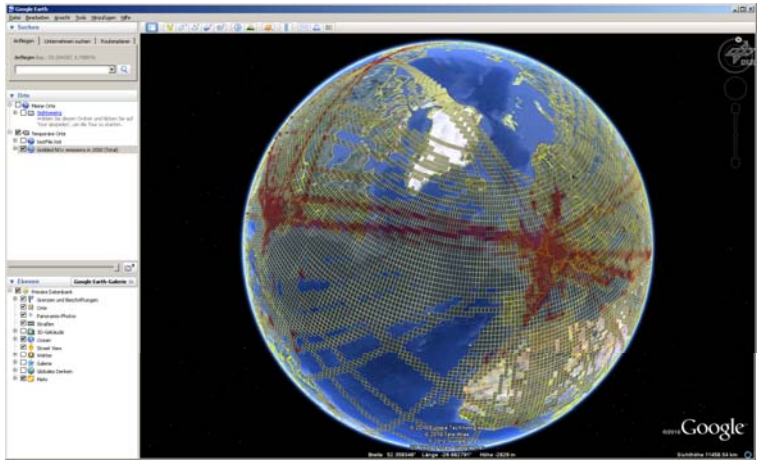
Example: Noise contour for an airport for a representative day



TE ATS Level Assessment

Example: September 2000 CO2 fleet inventory





Visualization on a globe

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