

CONSAVE 2050 – Project Information

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CONSAVE 2050 – Historical Background

- Following a proposal of a German Aviation Scenario Circle AERONET has performed two workshop on “Long-term Scenarios of Aviation and its Emissions” at
 - DLR, Cologne, 17–18 October 2000
 - the Airport Palma de Mallorca, 19-21 March 2001
- After these workshops, a team from DLR; NLR; QinetiQ, DLH, MVA, IIASA and Airbus was formed which developed a proposal for an EU - Accompanying Measure Project CONSAVE 2050. This proposal was approved by the Commission and a two year project was started in September 2002.

Partners and their roles/inputs

Partner Institutions:	Role/Input
DLR German Aerospace Center	Co-ordinator, Aviation Scenarios, System Analysis
IIASA Inter. Institute for Applied System Analysis, Vienna/AT (IPCC-Author)	Background Scenarios (Sub-Contract) incl. Global Developments/Assumptions
NLR Netherlands Aerospace Laboratory	Calculation (AERO-Model), Aviation Development/Assumptions
MVA, GB	AERO-Model Enhancements (Sub-Contract)
QinetiQ, (former DERA), GB	Aviation Technology Development/Assumptions
DLH, German Lufthansa	Stakeholder-Inputs by Advisory Committee
Airbus	Additional Data for Scenarios Calculation

The project (“Accompanying measure”, EC funded) with quantifications up to the year 2050, started in September 2002 and was finished end of July 2005

CONSAVE 2050 - Key features

- Goal is to design a representative set of robust quantitative scenarios of aviation and emissions with focus on the time horizon year 2050, an intermediate view to year 2025 (esp. relevant for aviation industry planning), and an outlook to year 2100 (esp. relevant for climate models).
- The project foresees explicitly and as its most important and innovative topic, the development of constrained scenarios. Most recent information from IPCC/SRES/2000 on assumptions for the development of population growths, economy, and other areas frame-setting for the development in aviation is used (whereas the IPCC/1999 aviation scenarios were based on now outdated IPCC/1992 background scenarios).
- The project addresses - from a European perspective - RTD policy issues (sustainable aviation) and competitiveness and sustainable growth issues in the aviation industry.

CONSAVE 2050 - Main objectives (Excerpt)

- To develop a set of quantitative scenarios which can be used to support the atmospheric science community, the aviation industry, and the policy and regulatory community: These sectors have a need to determine the possible growth of aviation and its emissions to deliver environmental response information, technology response strategies or policy or economic measures,
- to achieve a common European understanding on critical issues of aviation scenarios and related emissions by establishing a broad review process,
- to (i) strengthen the European aeronautic industry by delivering sound information which can be used to develop *in time* strategic orientation of short-, medium-, and long-term planning and (ii) to ensure sustainable growth of air transportation with regard to environmental issues,
- to generate - by the outlook to year 2100 - relevant data for climatology, supporting the improvements of models for the calculation and assessment of global and regional impacts of emissions from aviation and other sources.

Key questions

What questions do the long-term scenarios seek to answer?

First, there is an overarching question about the **environmental impacts** (noise and emissions) of aviation, especially for climate change and local air quality.

Which circumstances (demand, regulations to reduce climate impacts) and which technologies (conventional or hydrogen) and fuels will have which impact on the environment?

Other key questions (challenges, bottlenecks, constraints) explored in the scenarios and issues addressed in the project include:

- Will airport and airspace **capacities** be able to meet the rising demand?
- Which **distribution of flights** from/to different locations is to expect in the future?
- Which **technologies** could arise in which time to improve the aviation system?
- How will **preferences and values of citizens and customers** affect aviation demand (business & tourism, safety & security, convenience)?

CONSAVE 2050 – Work packages

WP 1: Key factors and qualitative background scenarios

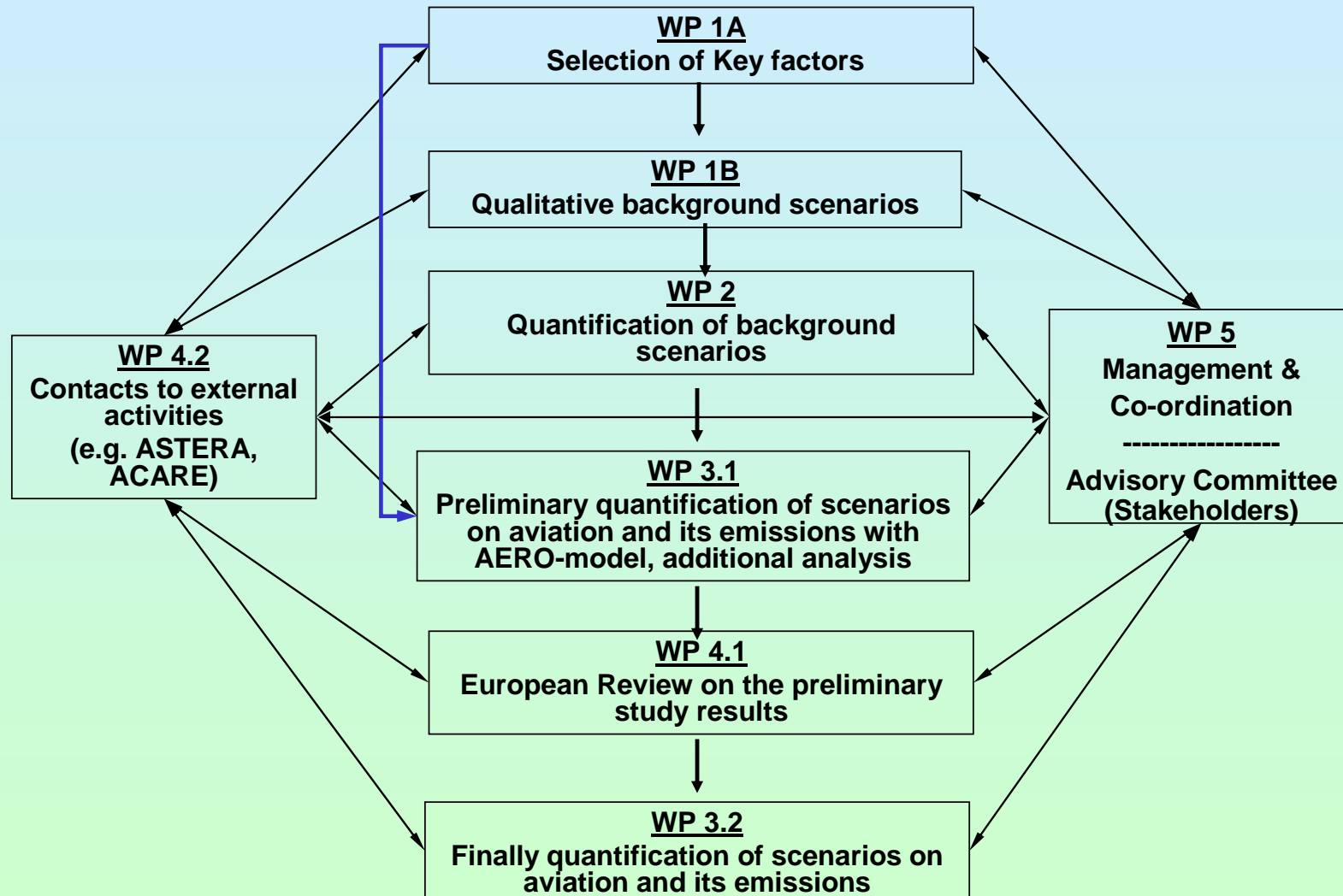
WP 2: Quantification of background scenarios

WP 3: Quantification of scenarios on aviation and emissions

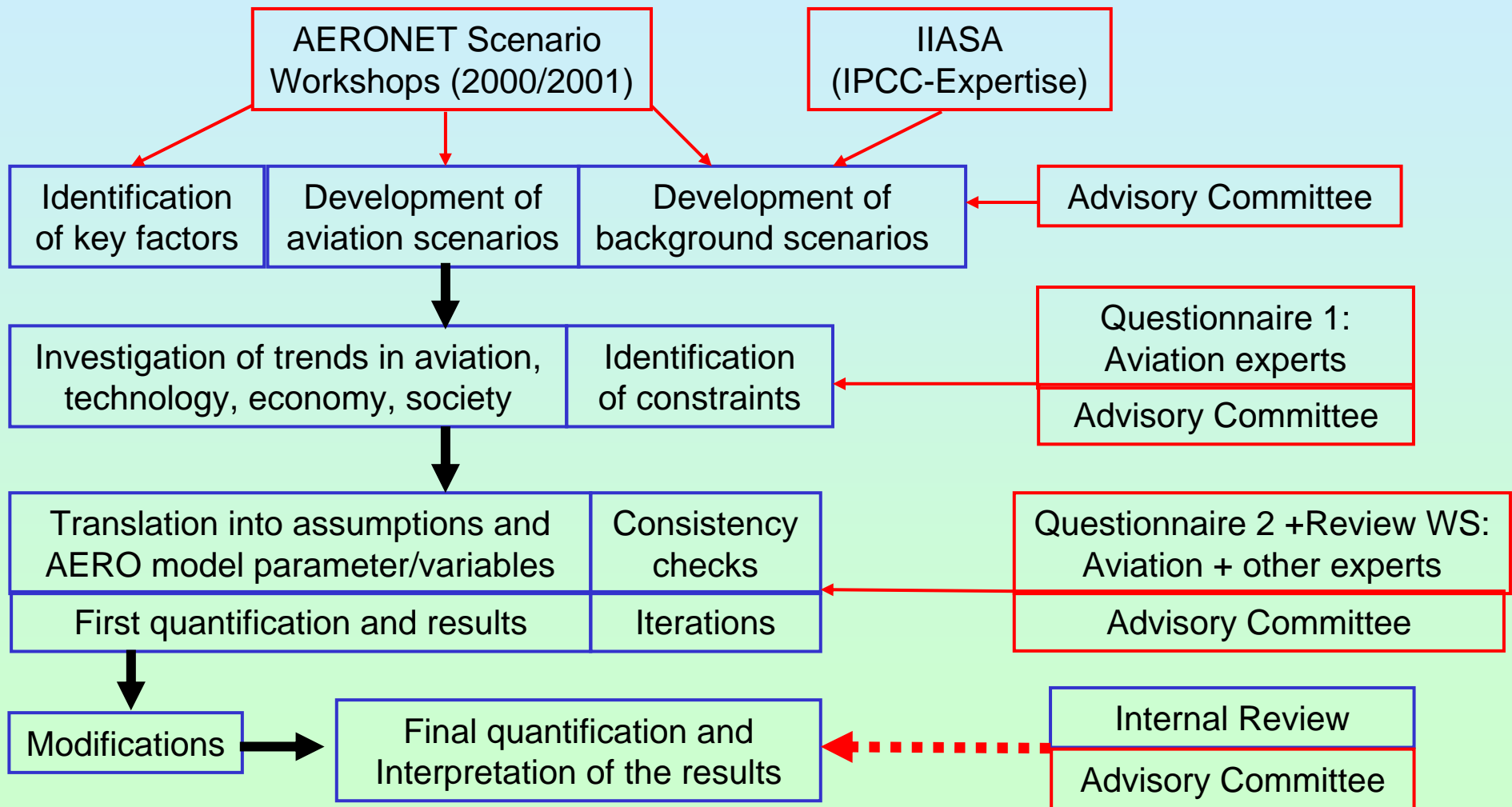
WP 4: Organisation of an European Review on preliminary study results and contacts to external activities

WP 5: Management and co-ordination

Main project work steps - approach:



Working process + external inputs



CONSAVE 2050 – Contact to Aviation Community

- **AC - Advisory Committee (Covers representatives from all main aviation sectors) :**

Permanent advise

- **AERONET experts (+selected others)**

Questionnaire

- **Related European external Projects: ACARE/ASTERA, AERO2K, TRADE-OFF etc.**

Contacts to exchange information and results

- **Total interested European aviation community**

European Review of preliminary results

Members of the Advisory Committee

Chairman:

- Karlheinz Haag / DLH

Manufacturers

- Nick Peacock / Rolls-Royce
- Rainer von Wrede / Airbus

Airlines

- Alvaro Middelmann Blome
- A. Hardeman, IATA

Science

- Neil Harris / Univ. Cambridge
- Peter Wiesen / BUGH

Air traffic control, Airports

- Ted Elliff / Eurocontrol
- Arthur Lieuwen / Eurocontrol

Politics

- Gerard Bekebrede
NL-Ministry of Transport, Public Works and Water Management
- Morten Winther
DK-Ministry of Environment and Energy
- Roger Gardner
UK-Ministry of Transport
- Ulrich Stoecker
D-Ministry of Transport

Scenarios are no forecasts

The scenario approach brings together *different perspectives* on problems, which are *often dependent* within a system. Scenarios try to *reduce complexity*, to *improve our system knowledge* and to generate a *holistic view* for stakeholders, including ecological, economic and social perspectives. However, scenarios are no forecasts, but a structured look on possible future developments to generate knowledge on unclear futures.

Scenario development requires at least:

- a clear question for the development of the scenario structure,
- a reviewed set of assumptions, which should be monitored and updated for further use,
- an adequate quantification model.

Any outcomes/results are strictly scenario related, relative to the assumptions made for the different development paths!