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# High Aspect Ratio Wing Design and Development for Short- and Medium Range Aircraft

Jos Vankan<sup>1</sup> and Bruno Stefes<sup>2</sup>

<sup>1</sup> Royal Netherlands Aerospace Centre NLR, Aerospace Vehicles Division,  
Anthony Fokkerweg 2, 1059 CM Amsterdam, The Netherlands,  
[jos.vankan@nlr.nl](mailto:jos.vankan@nlr.nl), [www.nlr.nl](http://www.nlr.nl)

<sup>2</sup> Airbus Operations GmbH, Flight Physics,  
Airbus Allee 1, 28199 Bremen, Germany,  
[bruno.stefes@airbus.com](mailto:bruno.stefes@airbus.com)

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## Abstract:

Sustainable aviation is a major challenge that requires technology developments in many different areas. One important area is the reduction of green-house gas (GHG) emissions, which is directly related to aircraft operations and energy efficiency. One of the key components for improving aircraft efficiency is drag reduction, and increased wing aspect ratio is a key enabler for that.

Therefore, this Special Technology Session (STS) will focus on technologies for design and development of high aspect ratio (HAR) wings for short- and medium range (SMR) aircraft. This category of aircraft is responsible for a major contribution in aviation GHG emissions and is therefore important to address. At the same time, these aircraft have high-tech wings with advanced aerodynamics, optimized structures and complex integration of primary and secondary flight controls. The further improvement of these high-tech wings requires advanced modelling, innovative computational methods and design tools for all required technology areas. In particular, increasing the wing aspect ratio will require special attention for load control, for which combined numerical-experimental investigations are being pursued for example in the Clean Aviation UP Wing project.

The STS will invite papers on the design, modelling, analysis, testing, validation, manufacturing and assembly of all the relevant technologies that are involved in the development of these advanced high-aspect ratio wings.

Chairs' detailed affiliations:

Dr.ir. Jos Vankan  
Principal Scientist  
Royal Netherlands Aerospace Centre NLR  
Aerospace Vehicles Division, Collaborative Engineering Systems Department  
Anthony Fokkerweg 2, 1059 CM Amsterdam, The Netherlands  
T +31-88-5113059 | E [jos.vankan@nlr.nl](mailto:jos.vankan@nlr.nl) | W [www.nlr.nl](http://www.nlr.nl)

Dr.-Ing. Bruno Stefes  
Flight Physics  
Airbus Operations GmbH, 28199 Bremen, Germany  
M +49 172 4032258 | E [bruno.stefes@airbus.com](mailto:bruno.stefes@airbus.com)

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