Experiences made during the Certification of the Austrian EUROFIGHTER/Typhoon with focus on the various recognition elements
Scope

- Eurofighter Nations contractual environment
  - Qualification and Certification Principles
  - Recognition elements of the contract
- German mil. certification process for Eurofighter
  - German Air Navigation Act
  - Joint Service Regulation ZDv 19/1
- Details on the Austrian Export Contract and the role of the GE Airworthiness Authority
- Summary
EF Contractual Environment

- Main Development Contract
  - Common Development Specification and means of compliance (WSDPS, ASD)
  - Common Certification Basis
  - Agreed Quality Assurance (QA) Standards and Procedures
  - Split development responsibilities (Industry and Authorities)

- Production Contracts (PI/P Supplements 1-4)
  - Common Production Specification and means of compliance (WSPS, PASD)
  - QA Standards and Procedures and development responsibilities as during the Development Phase

- ILS Contracts
Contractual Qualification & Certification Documents

- **Design Standard** (Annex 1)
- **EF Assessment of technical Compliance**
- **P-AWFL** (Annex 4)
- **WS-DDP (WS Declaration of Design and Performance)**
- **WSPS**
- **ASD Verification Forms** (Annex 2)
- **WS Safety Assessment Report** (Annex 3 Part 3)

**System Qualification**
- **System Integration Test**
- **Flight Test**
  - **SQS/DDP** (Annex 3 Part 2)
4 Nations Qualification & Certification Process

WS-DDP or QS
Design Standard
WSSAR
42 x SDR Certificates
Limitations

Industry

NETMA/Nations Process

QCSG

WS-DSAE or QS

LNAAR

NAAR
NAAR
NAAR

QG

ES 1

QGA

ES n

DEU Process

WTD 61
Director AW

DEU
Eurofighter
Type Certificate

Scope

EF PI/P Contract

GE mil. Certification

Austria Exp. Contract

Summary
Recognition Elements of the EF contracts

- Agreed Quality Assurance (QA) Standards and Procedures
  - Recognition of the applied QA system by the 4 core Nations
- Agreed Qualification and Certification standards and principles achieving development result recognition in between the core Nations
  - SDR* Principle for Industry and
  - LNAAR** Principle for Authorities

* SDR: System Design Responsible Company
** LNAAR: Lead National Airworthiness Authority Representative
SDR and LNAAR Principle

NETMA Qualification Group (QG)
(4 NAAs + NETMA chair + EF GmbH)

Eurofighter GmbH
(PI/P Contract partner)

NETMA Qualification Certification System Groups
(1 LNAAR + 3 NAARs + NETMA chair)

System Design Responsibility

Industry SDRs

Data, Access and Dialog

Authorities LNAARs

ALENIA
BAES
CASSIDIAN-C
CASSIDIAN-D

Italy
UK
Spain
Germany
German military Certification Process

- Based on the civil Process (FAA/EASA) and follows the same principles
- Civil Regulation was adapted in order to be able to clear aircraft and equipment for “military usage”
- For Eurofighter the QG Clearance Recommendation (QGA) has to be transferred into a national Type Certificate covering only the DEU configurations:
  - National Technical Publications
  - National Modifications
  - Waiver/Deviations affecting the type
Area of Civil Regulations (FAA/EASA)

- Aviation Industry
- Civil Aviation Authority (EASA)
- Civil Aviation Authority German
- Civil Aviation Authority Germany
- Aviation Industry
- Civil Aviation Authority Germany
- German Bureau of Aircraft Accident Investigation

Area of Bundeswehr Regulations

- Director Airworthiness
- Director Airworthiness
- GAF Weapon System Command; Director Airworthiness
- Federal Office of Defense Technology and Procurement (BWB T 3.3)
- Bundeswehr Quality Assurance Authority (BWB T 3.3)
- Bundeswehr Quality Assurance Authority (BWB T 3.3)
- GAF Weapon System Command, WTD 61, Director Airworthiness, BWB PA L
- Bundeswehr, General Flight Safety
- GAF Weapon System Command
Presentation Austria
Summary (1)

- Eurofighter core Nations contractual environment covers already various recognition elements related to qualification and certification.
- DEU has made positive experience with this contractual environment during development and in the early production phase (common configuration management).
- Starting with the In-Service phase the number of “National configurations” that were not developed in full compliance to the contractual requirements increased. As a consequence the effectiveness of the qualification and certification processes decreased and lengthy discussions among the core Nations started.
- More communality between configurations increases the possible benefit out of the Recognition process.
Summary (2)

- Austria has decided to keep their Eurofighter configuration as close as possible to the configurations used by the German Air Force.
  - The effort for achieving recognition of the DEU Type Certificate for AUT is very limited
  - Due to the effectiveness in the qualification and certification process (minimum effort for qualification/certification of the DEU/AUT configurations) the “benefit” for Austria is high.
- The benefit for the “donating Nation (DEU)” is limited
- The benefit for the “receiving Nation” is in general also dependent from the level of coincidence to configurations certified by the “donating Nation”.