

Key Requirements for accessing the European Aerospace Market

Presentation for



Aerospace Industries
Association of Canada

L'Association des industries
aérospatiales du Canada



AVERA Consulting Inc.

- Training and Consulting Services for the Aerospace Supply Chain
- Supplier Assessments, Fact Finding Missions, Matchmaking
- Victoria, BC
- Associate Partner of AirBusiness Academy SAS

AirBusiness Academy SAS

- 100% subsidiary of Airbus SE
- Toulouse-Blagnac, France
- Training Centre for
 - Airbus employees
 - Airlines
 - Aerospace Supply Chain



- 1960's: fragmented European Market
- 1970: U.S. manufacturers 97% market share, formation of Airbus Industrie (Joint Venture) by European Governments (France, Germany, United Kingdom, Spain)
- 1972: A300 first flight, first twin-aisle, twin-engine jetliner
- 1987: A320 first flight, fly-by-wire
- 1992: A330 first flight, twin-engine, long-haul
- 2001: Formation of European Aeronautic Defence and Space EADS
- 2005: A380 first flight, world's largest passenger airliner
- 2013: EADS becomes Airbus Group, A350 first flight



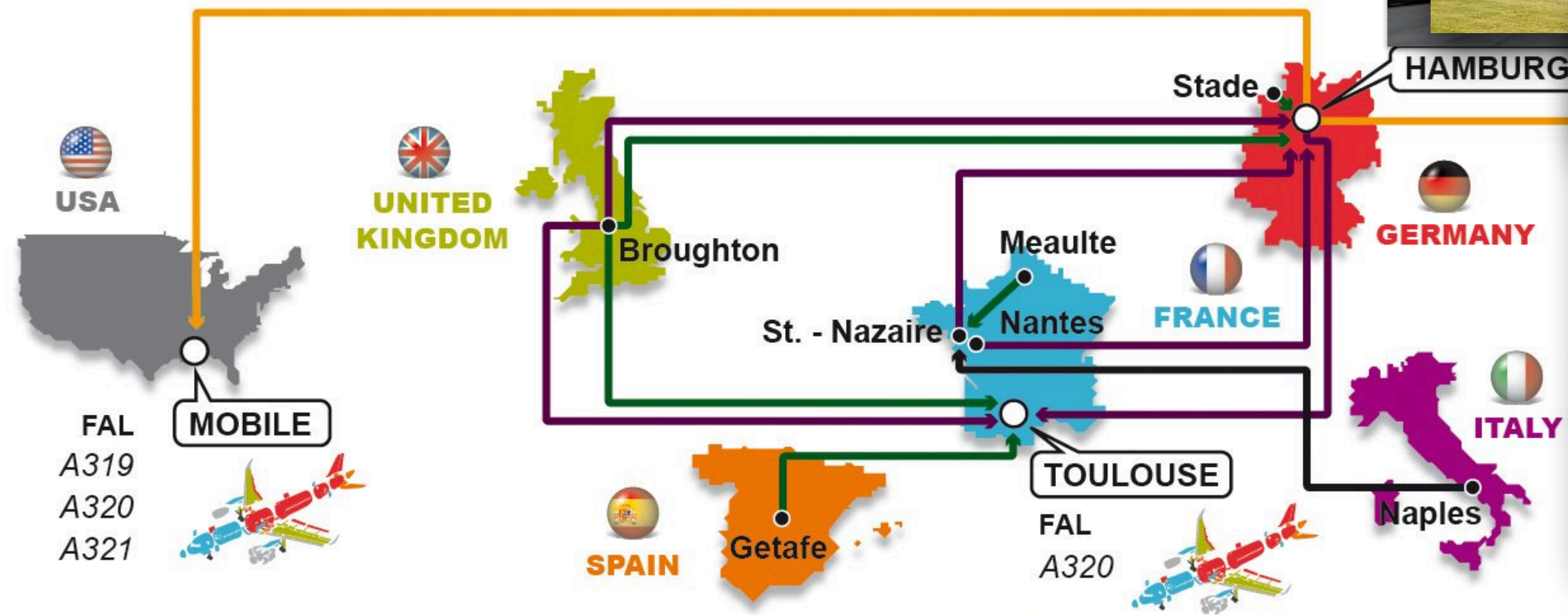
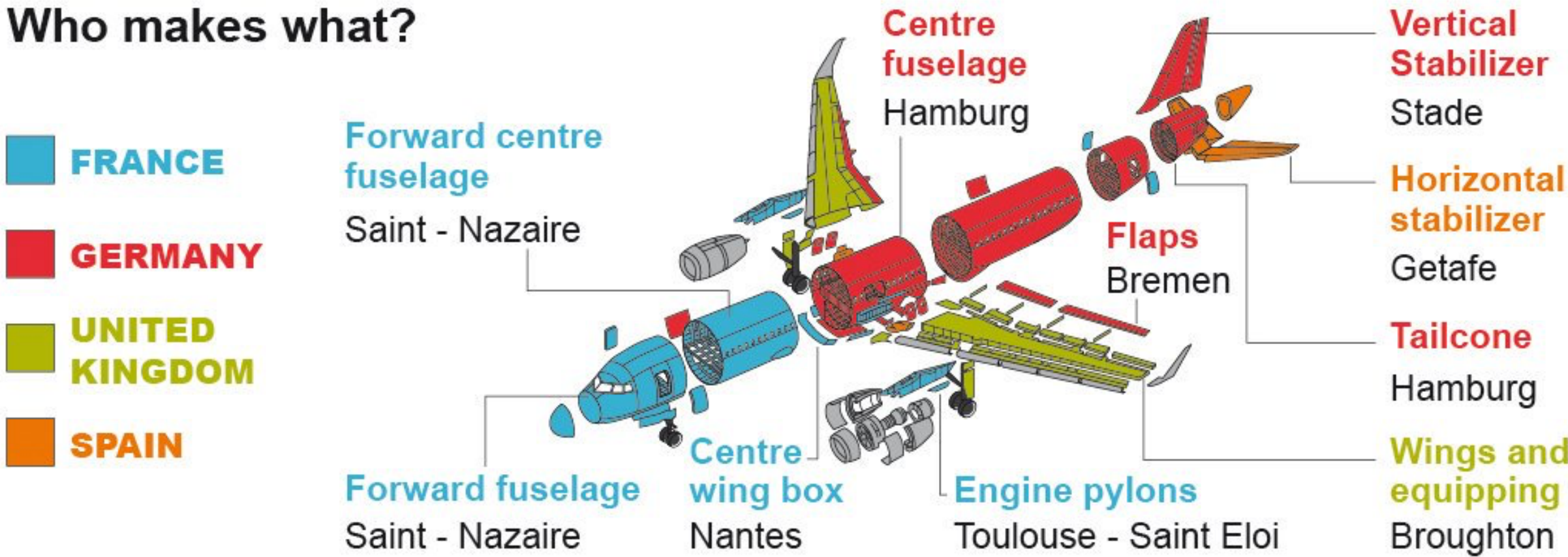
- December 1st, 2016
RCAF fixed-wing SAR contract awarded to Airbus Defence and Space
- October 16th, 2017
Airbus taking a majority stake in Bombardier's C-Series program
- Tom Enders: Canada set to become Airbus' "fifth home country"



Source: Airbus 2017



Who makes what?



AMERICA

EUROPE

ASIA



Source: Airbus 2014



QUALITY

Make it right the first time



ON-TIME DELIVERY

Reach and sustain excellent performance



RAMP-UP

Ensure sufficient capacity



COST

Be creative and propose solutions for cost optimisation



- **Globalizing & consolidating** the Supply Chain
- **Stimulate competition** within supply chain
- **Fewer and bigger** suppliers with **enhanced responsibility**
- **Early involvement** of major suppliers in **joint development** teams including R&T
- **Global** sourcing



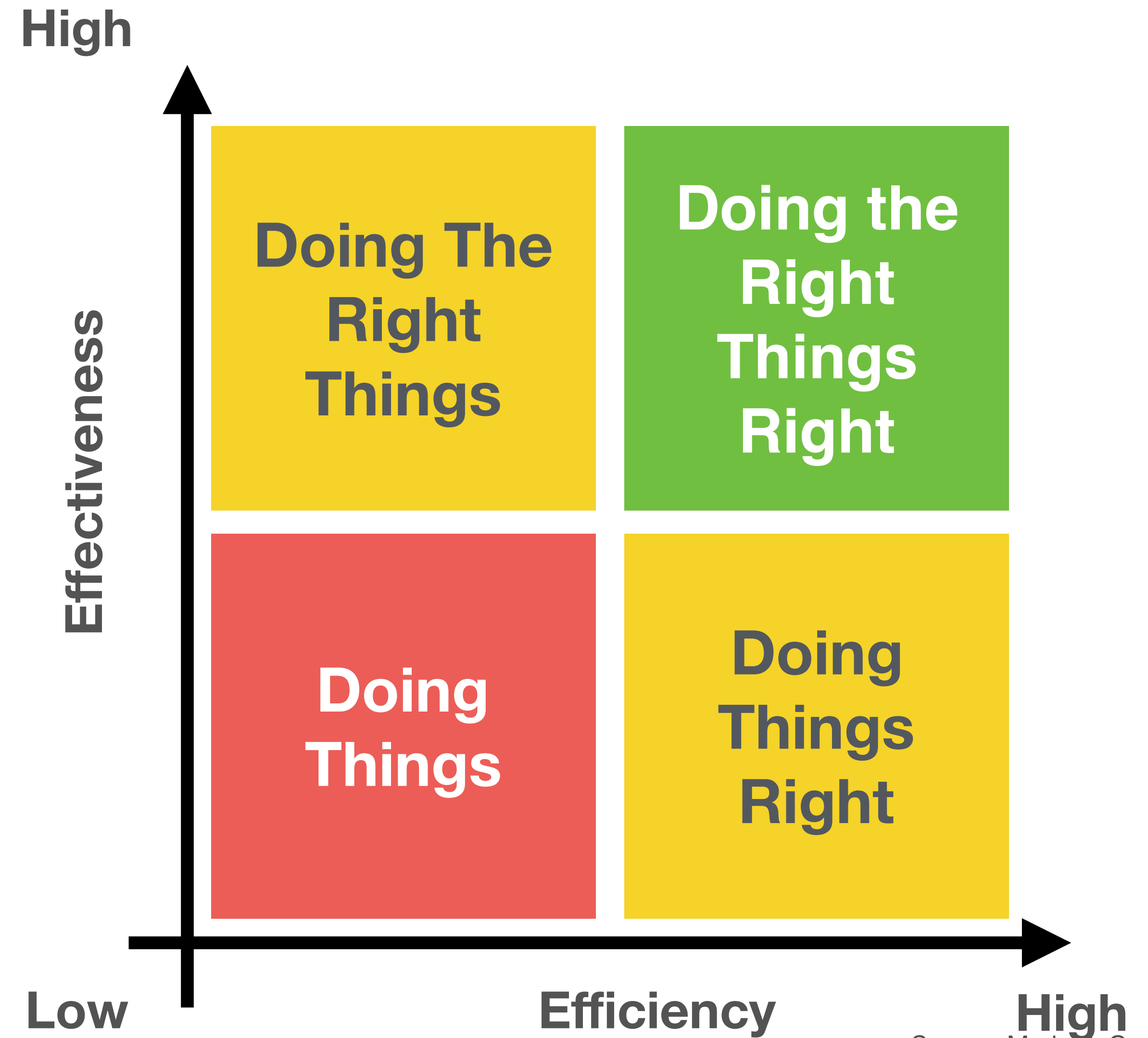
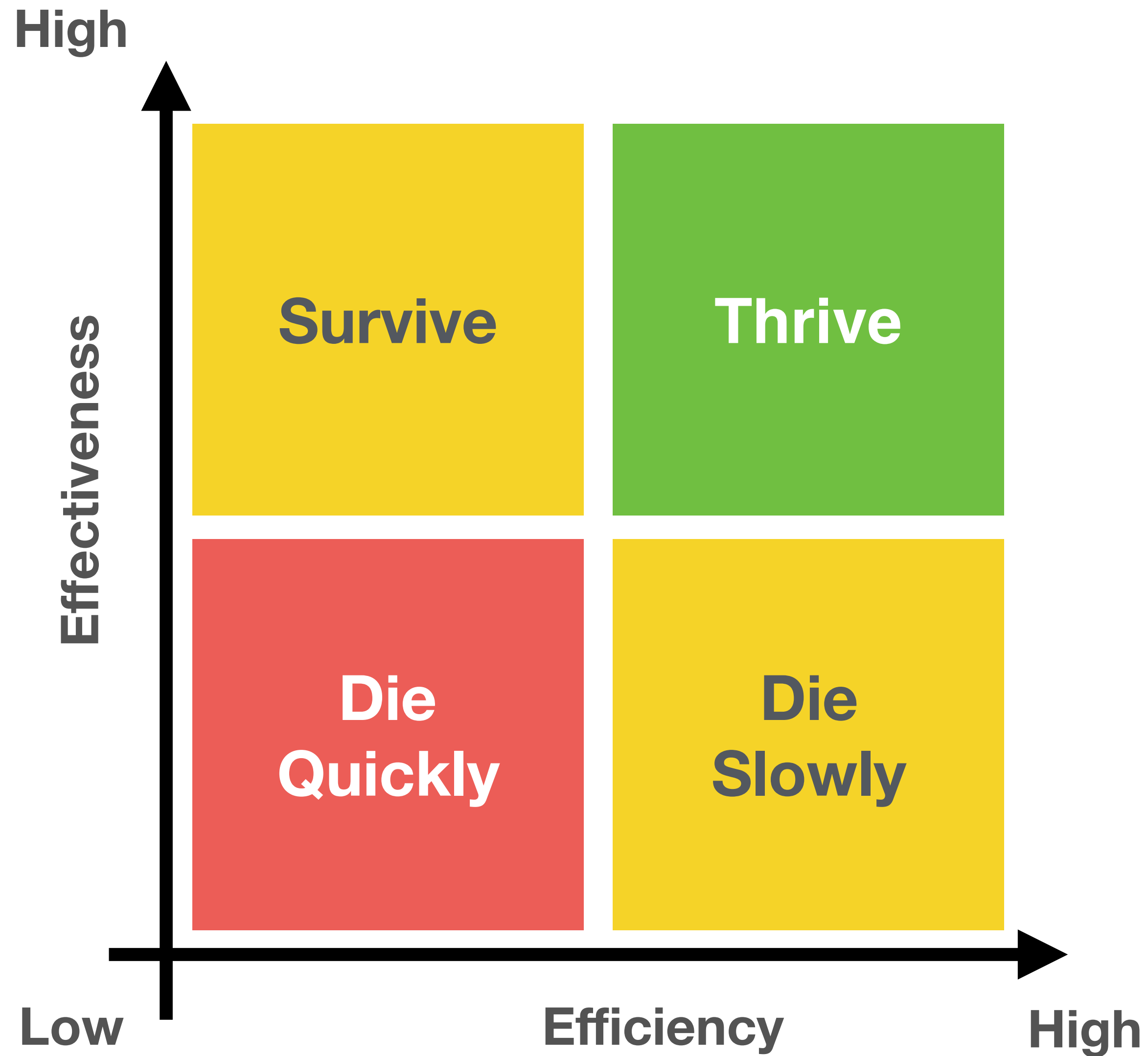
- **Direct** as Tier-1
- **Indirect** as Sub-Tier
- **New** programs
- **Existing** programs

It is important to understand
the most suitable position
within the supply chain...

Not everyone has to be Tier 1!



The Magic Quadrant



Source: Mark McGregor



- **Environmental commitment**

- Reduced fuel consumption, CO2 emissions and noise (Clean Sky 2)
- Waste and chemicals reduction in production (REACH compliance)

- **Innovation**

- Additive Manufacturing
- Light weight structures
- Digital transformation
- Electric flight, urban mobility
- New interior concepts



- **Innovation**
- **Quality**
- **On-time Delivery**
- **Ramp-up capability**
- **Cost**
- **But there is more...**

In order to become an award-winning supplier in a global supply chain



you need:

knowhow, money,
machines and
equipment,
workforce, buildings,
and...

APPROVALS



Mission

- Ensure the highest common level of **safety protection** for EU citizens
- Ensure the highest common level of **environmental protection**
- **Single regulatory and certification process** among Member States
- Facilitate the internal aviation single market & **create a level playing field**
- Work together with other **international aviation organizations and regulators**



Established
2002

*15 years
in operation*

800+

aviation experts
& administrators

Headquarters in
Cologne
Office in
Brussels

32 EASA member states
= 28 + 4
EU + Switzerland, Norway
Iceland, Liechtenstein

Source: EASA 2017



Design Organization, Part 21, Subpart J

- An organization responsible for the **design** of aircraft, aircraft engines, propellers, auxiliary power units, or related parts and appliances
- Holding, or applying for, **type-certificates, supplemental type-certificates**, changes or repairs **design approvals** or **ETSO Authorizations**



EASA
European Aviation Safety Agency

APPROVAL CERTIFICATE
EASA.21J.019

Pursuant to Regulations (EC) 216/2008 and (EU) 748/2012 and subject to the conditions specified below, the Agency hereby certifies

Lufthansa Technik AG
Weg beim Jäger 193
22335 Hamburg
Germany

as a DESIGN ORGANISATION

approved according to Part 21, Section A, Subpart J.

CONDITIONS :

1. The approval is limited to that specified in the enclosed Terms of Approval, and
2. This approval requires compliance with the procedures specified in the Integrated Management Manual of the Lufthansa Technik Group, the IQ MOVE Supplement No. 101, and the related processes of the Integrated Documentation System IQ MOVE, in the latest revision, and
3. This approval is valid whilst the approved Design Organisation remains in compliance with Part 21, Section A, Subpart J.
4. Subject to compliance with the foregoing conditions, this approval shall remain valid until surrendered or revoked.

For the European Aviation Safety Agency,
Date of issue: 21 July 2017


Markus Görnermann
Head of Design Organisations Department


An agency of the European Union

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Production Organization, Part 21, Subpart G

- An organization responsible for **production** of new individual aircraft and/or spare parts **conforming to the approved design data** and in condition for safe operation
- Parts can be **approved** for a particular aircraft type once it has been installed as prototype to an aircraft and has been **certificated** by a Design Organisation (TC, STC or Minor Change Approval)
- **DO/PO arrangement** required

BUNDESREPUBLIK DEUTSCHLAND
LUFTFAHRT-BUNDESAMT



Mitgliedstaat der Europäischen Union
A Member of the European Union

BESCHEINIGUNG DER GENEHMIGUNG ALS HERSTELLUNGSBETRIEB
PRODUCTION ORGANISATION APPROVAL CERTIFICATE

Aktenzeichen: DE.21G.0047
Reference: DE.21G.0047

Gemäß der Verordnung (EG) Nr. 216/2008 des Europäischen Parlaments und des Rates und der Verordnung (EG) Nr. 748/2012 der Kommission in ihrer geltenden Fassung und vorbehaltlich der im Folgenden angegebenen Bedingungen bescheinigt das Luftfahrt-Bundesamt hiermit
Pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council and to Commission Regulation (EC) No 748/2012 for the time being in force and subject to the condition specified below, the Luftfahrt-Bundesamt hereby certifies

Lufthansa Technik Aktiengesellschaft
Weg beim Jäger 193
22335 Hamburg

die Genehmigung als Herstellungsbetrieb entsprechend dem Anhang (Teil 21) Hauptabschnitt A Abschnitt G der Verordnung (EG) Nr. 748/2012, dem die Herstellung von Erzeugnissen, Teilen und Ausrüstungen, die im beigefügten Genehmigungsumfang aufgeführt sind, sowie die Erteilung entsprechender Bescheinigungen unter Verwendung der obigen Bezugsdokumente genehmigt ist.
as a production organisation in compliance with the Annex (Part 21), Section A, Subpart G of Regulation (EC) No 748/2012, approved to produce products, parts and appliances listed in the attached approval schedule and issue related certificates using the above references.

BEDINGUNGEN
CONDITIONS

1. Die Genehmigung ist auf den in den beiliegenden Genehmigungsbedingungen angegebenen Umfang beschränkt.
This approval is limited to that specified in the enclosed terms of approval, and
2. Diese Genehmigung erfordert die Einhaltung der im Betriebshandbuch des Herstellungsbetriebs spezifizierten Verfahrensvorschriften.
This approval requires compliance with the procedures specified in the approved production organisation exposition, and
3. Die Genehmigung ist gültig, solange der zugelassene Herstellungsbetrieb die Anforderungen des Anhangs (Teil 21) der Verordnung (EG) Nr. 748/2012 einhält.
This approval is valid whilst the approved production organisation remains in compliance with the Annex (Part 21) of Regulation (EC) No 748/2012.
4. Vorbehaltlich der Erfüllung der vorstehenden Bedingungen behält die Genehmigung ihre Gültigkeit für eine unbegrenzte Dauer, sofern sie nicht zurückgegeben, ersetzt, ausgesetzt oder widerrufen worden ist.
Subject to compliance with the foregoing conditions, this approval shall remain valid for an unlimited duration unless the approval has previously been surrendered, superseded, suspended or revoked.

Datum der Erstaussstellung: Date of original issue:	27. August 2004	LUFTFAHRT-BUNDESAMT Im Auftrag p.p.
Datum dieser Revision: Date of this revision:	24. Februar 2016	
Revisions-Nr.: Revision No:	3	



Unterschrift:  (Selonke)
Signed:

EASA-Formblatt 55a Ausgabe 2, 01-10
EASA Form 55a Issue 2, 01-10

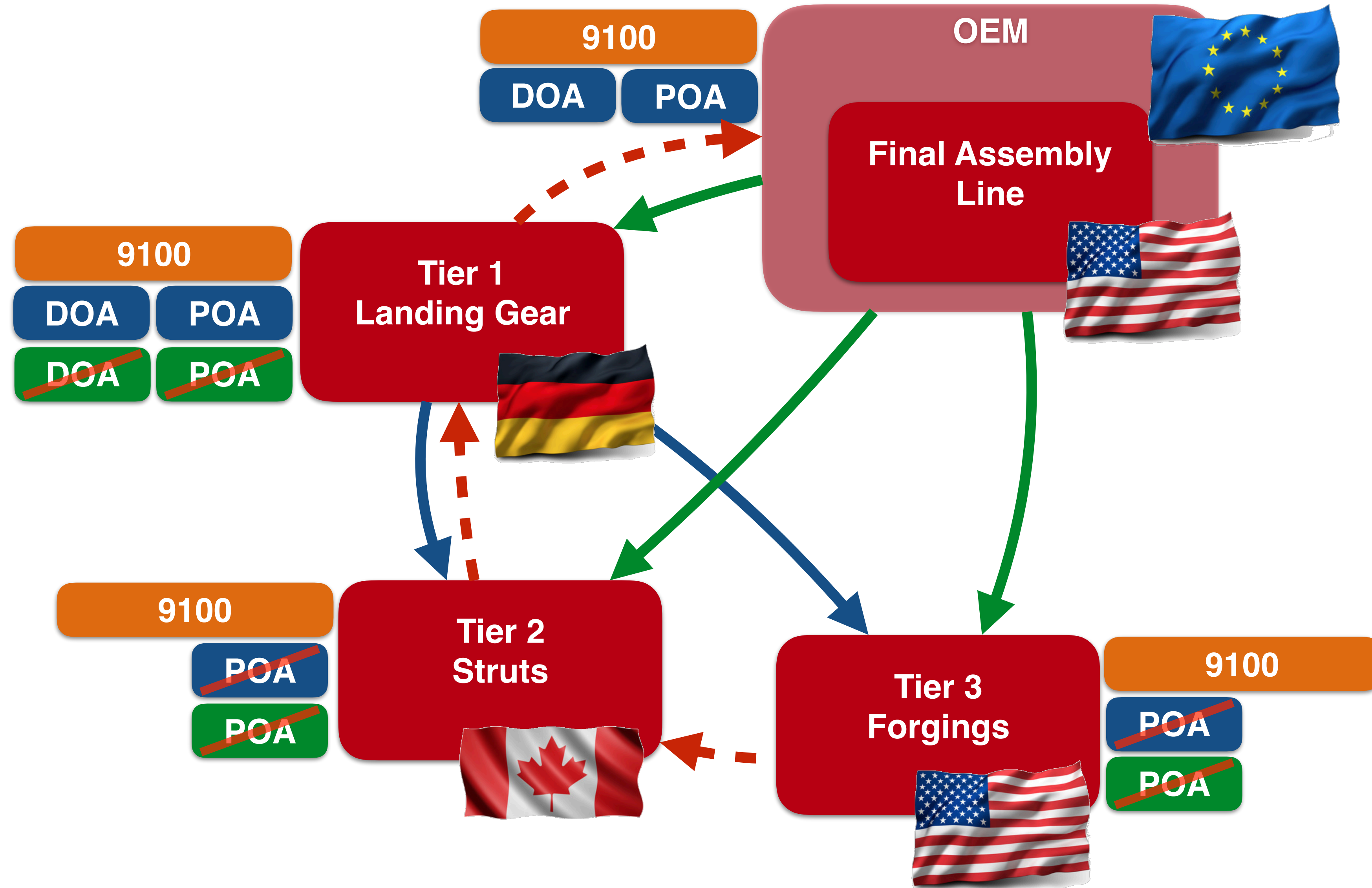
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Key Requirements

Approvals and Certifications

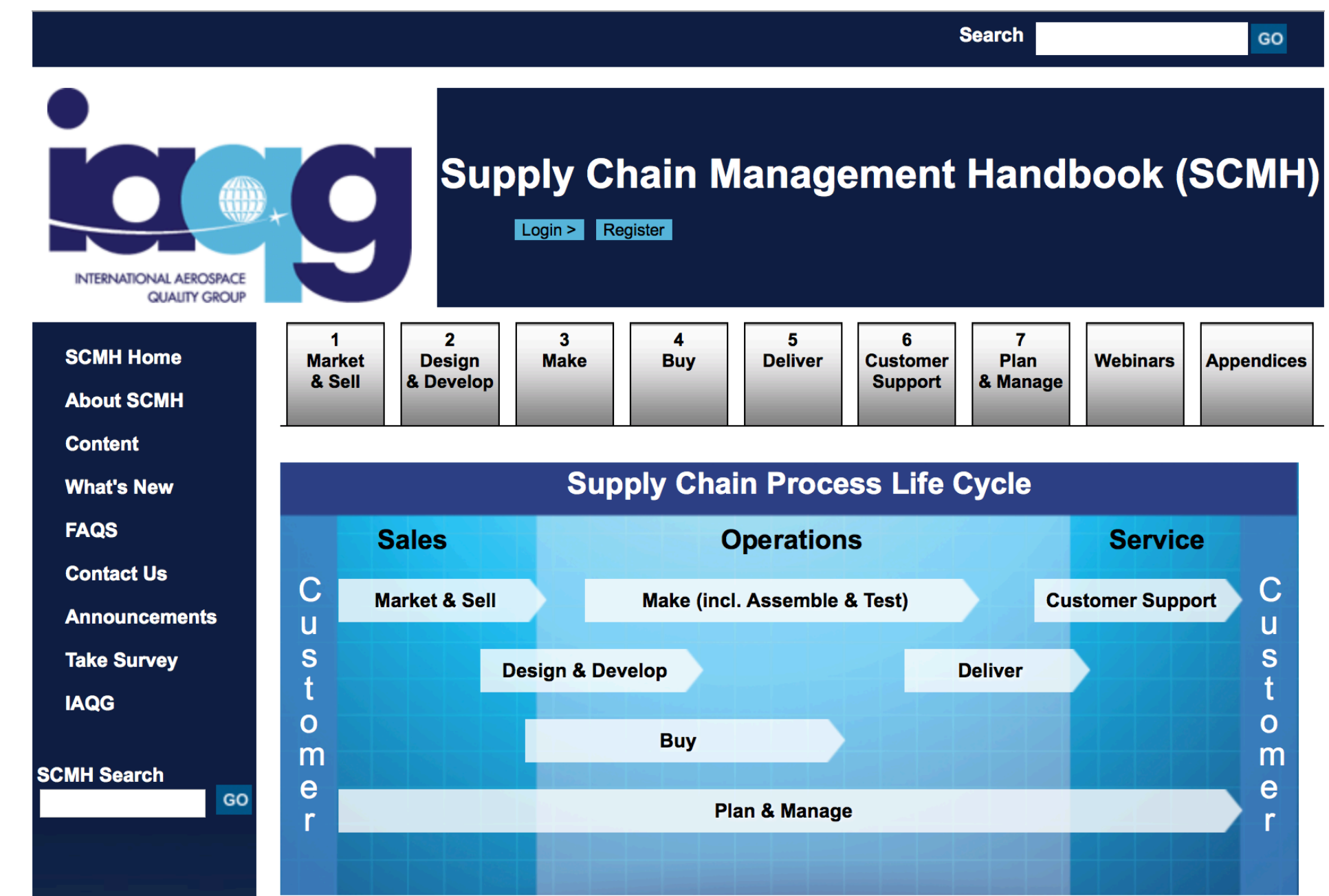
- **AS/EN 9100**
- **Design Organization Approval**
- **Production Organization Approval**



Key Requirements for Aerospace Suppliers

Quality and Supply Chain Management

- Baseline: AS/EN 9100
- SCM at IAQG
- Deployment of Global Supply Chain Standards and Guidelines
- Increasing on-time, on-quality delivery performance
- Led by Bernard Lauras, head of Procurement Quality at Airbus



13 January 2016

Zodiac Aerospace publicly humiliated by Airbus for delaying the A350 program.

Airbus has cast doubt on Zodiac Aerospace, saying the company's output delays.

NEWS & INSIGHT

PRODUCTS AND SERVICES

ABOUT US



Bloomberg

Markets

Tech

Pursuits

Politics

Opinion

Businessweek

Airbus to Swap Finnair's Zodiac Seats Amid A350 Quality Concerns

By **Benjamin D Katz**

June 4, 2017, 8:40 PM PDT *Updated on* June 5, 2017, 3:34 AM PDT



Source

UPDATE 1-Airbus says Zodiac has "not recovered yet" after delays



Operational Excellence

- Production Planning
- Reducing inventory levels
- Accelerating production rates

Supply Chain Excellence

- Reliable Supply Chain Collaboration

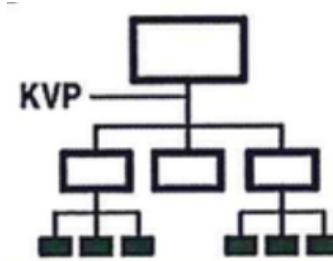


Best Practices from Automotive

Readiness for Change



CIP Organization



Process Orientation



Communication



Metrics



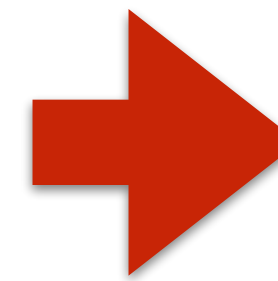
Workshop / Project Plan



Methodology and Tools



Training



- Aerospace specific: lead time, volumes, complexity
- End-to-end process view
- Value Stream Thinking



- Innovative Solutions
- Approvals
- Quality Management
- Operational Excellence
- Supply Chain Excellence
- First-hand knowledge about your customer



- 25 - 29 APR 2018, ILA Berlin with International Suppliers Center ISC, Berlin, Germany
- 16 - 22 JUL 2018, Farnborough International Air Show, Farnborough, UK
- 23 - 25 OCT 2018, AirTec International Aerospace Supply Fair, Frankfurt, Germany
- 27 - 29 NOV 2018, **expoAir International Aerospace Supply Chain and Technology**, Munich, Germany



- **Ongoing (in collaboration with AirBusiness Academy):**
 - in-house customized training sessions
- **Q1/Q2 2018, AVERA Workshop Series**
 - Rules and Regulations (in collaboration with EASA)
 - Quality Management (in collaboration with ASQ)
 - Operational Excellence (in collaboration with GoProductivity)
 - Supply Chain Management (in collaboration with AirBusiness Academy)
 - Airbus Specific Requirements (in collaboration with AirBusiness Academy)



The way forward

Training and Consulting Services - directly from the source



	Understand	Implement
1. Fulfill Aerospace Supplier Requirements		
Rules, Regulations and Approvals	✓	
Quality Management	✓	
Supply Chain Management	✓	✓
Operational Excellence	✓	✓
2. Access the European Aerospace Supply Chain		
Market Intelligence	✓	
Capability Assessments		✓
Benchmarking		✓
Matchmaking		✓

Directly from the source!

AIRBUSINESS
ACADEMY



Thank you!



Thank you!



&



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