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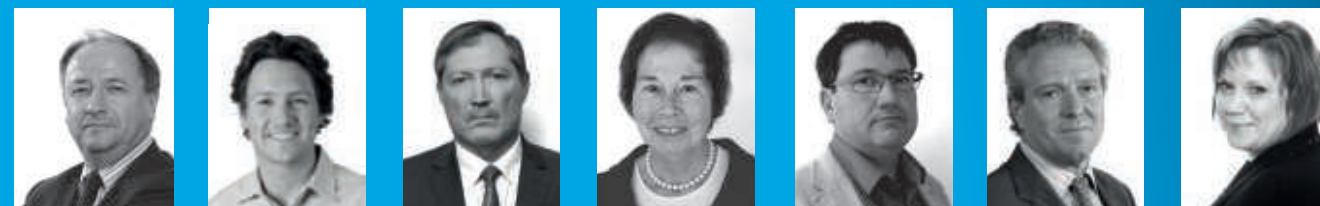
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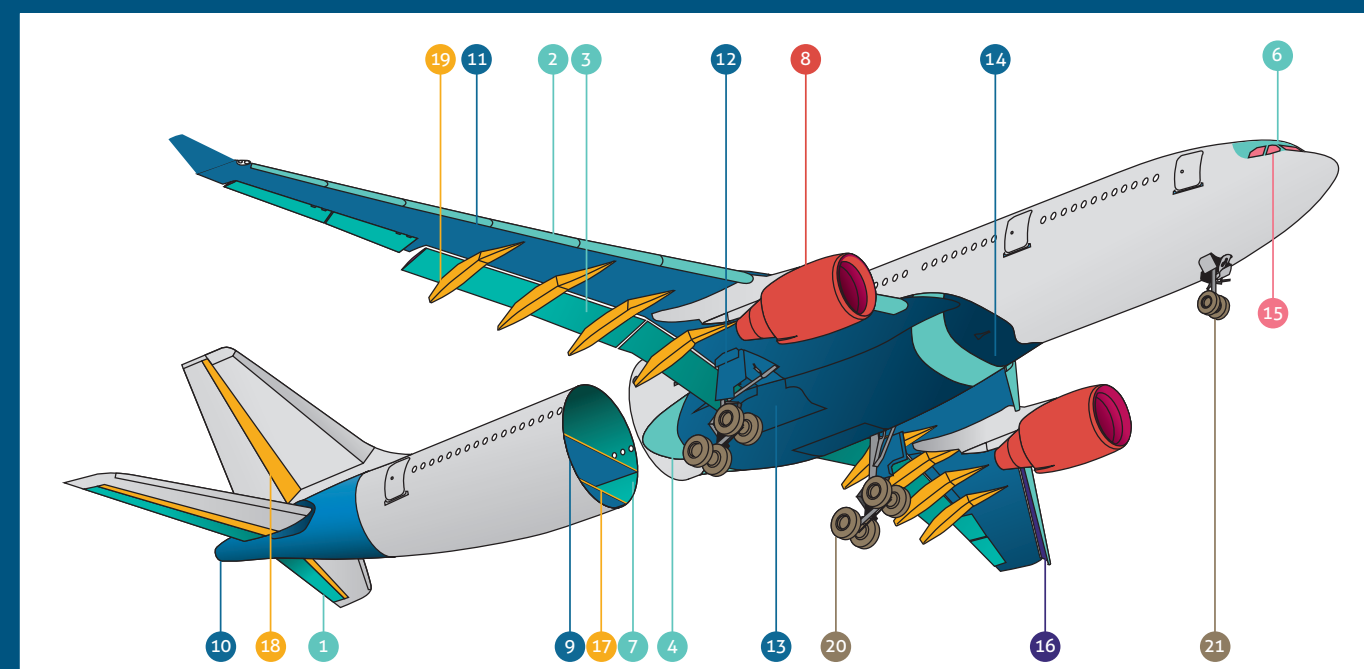
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SKYWIN SHARE IN CIVIL AIRCRAFT PARTS



Skywin is the aerospace cluster of Wallonia, a region of Belgium. Skywin gathers private companies, training centers, research units and universities that are engaged in a public and private partnership. It is Skywin's mission to build synergies between those actors around common and innovative projects that will reshape a significant part of our economy for the next decades.



Disclaimer: this picture is illustrative of the main Walloon contributions to a typical civil aircraft program. Therefore, it is not an comprehensive list.

MAIN COMPONENTS

- Sonaca**
Leading edges, slats flaps & tracks
1 2 3
- Composite fuselage parts**
4 5 6
- Fuselage frames and beams**
7
- SAFRAN Aero Boosters**
Engine boosters
Lubrication groups
8
- SABCA**
Cabin floor, Wing box
Tail cone, main gear doors
9 10 11 12 13 14
- Thales Belgium**
Cockpit communication systems
15
- Technical Airborne Components**
Bodair
Carbon fiber rods
16
- Hexcel**
Honeycomb sandwich panels
17 18 19
- Bridgestone Aircraft Tire**
Rechapping wheels
20 21

INDUSTRIAL PARTICIPATIONS

- METALLIC COMPONENTS**
Britte-Mustad
High precision components
Capaul
High precision machining for engine components
Dumoulin aero
Machining of metallic components
Mecasoft
High precision components, electro-erosion
Mockel
High precision components
Precimetal
Metallic components
Shur-Lok
Fasteners, nuts & fittings
- Vanhulen Springs**
- AMI Metals Europe**
Aluminium plate & sheets
- Consolidated Precision Products**
Metallic complex components
- Doncaster Settas**
Titanium components
- SURFACE TREATMENTS, COATINGS**
Advanced coatings
La Nitration Moderne
Lescav Aero
- COMPOSITES AND PLASTIC COMPONENTS**
Coexpair
Engineering, equipments and tools
Sobelcomp
Composites parts
JDC Innovation
Composites parts
Feronyl
Plastic injected components, composite materials
Isomatex
Enhanced volcanic rock filaments
Nanocyl
Carbon nanotubes, epoxy resins

SKYWIN MEMBERS

- ACTE
- ADDIPARTS
- ADVANCED COATING
- AE VALVES
- AEROFLEET
- AETHIS
- AGORIA WALLONIE
- AIRCRAFT TRADERS BELGIUM
- AKKA BENELUX
- ALM INDUSTRY
- AMI METALS EUROPE
- AMOS
- ANY-SHAPE
- APS (Agence Prévention et Sécurité)
- AQUAPOLE
- AWEX
- BALTEAU NDT
- BANP
- BARCO SILEX
- BELGIUM ENGINE CENTER
- BODAIR
- BRIDGESTONE AIRCRAFT TIRE (Europe)
- BRITTE-MUSTAD
- BRUSSELS SOUTH CHARLEROI AIRPORT
- CAPPAUL
- CEGELEC
- CENAERO
- CETIC
- CEWAC
- CISSOID
- CITIUS ENGINEERING
- CMI INDUSTRY
- COEXPAIR
- CONDORCET (Hte Ecole Prov. du Hainaut)
- CORI (Coating Research Institute)
- CRA-W
- CREACTION
- CRIBC
- CRM GROUP
- CSL
- DARDENNE
- DELTATEC
- DONCASTERS SETTAS
- DRONE VALLEY ASBL
- DUMOULIN AERO
- E-XSTREAM ENGINEERING
- ECOLE ROYALE MILITAIRE
- EREM
- ESPACE D (EspaceDrone)
- ETIENNE BONNE FORTUNE
- EURO HEAT PIPE
- EURO SPACE CENTER
- EUROPEAN METROLOGY SYSTEMS
- FERONYL
- FLYGGER
- FLYING CAM
- FN HERSTAL
- GDTECH ENGINEERING
- GEONX
- GILLAM-FEI
- GIM PROJECTIONS
- HEXCEL COMPOSITES
- HIPPEROS
- I-MAGE CONSULT
- INCIZE
- INR BODSON
- ISOMATEX
- ISSEP
- IT-OPTICS
- JD'C INNOVATION
- KST
- LA NITRURATION MODERNE
- LAMBDA-X
- LEBRUN
- LESCAV
- LGM BELGIUM
- M3 SYSTEMS BELGIUM
- MATERIA NOVA
- MECASOFT
- METAL FORMING
- MOCKEL
- MSC SOFTWARE BELGIUM (ex FFT)
- MUBEA SYSTEMS
- MULTITEL
- MUSTAD BELGIUM
- NANOCYL
- NSILITION
- NUMFLO
- OAD
- OPEN-ENGINEERING
- OPTRION
- OSCAR'S BELGIQUE
- PEGARD
- PI-CARRE ASBL
- POLMANS
- PRECICARB
- PRECIMETAL FONDERIE DE PRECISION
- PRONOVEM
- Q-SQUARE MANAGEMENT
- Q3S
- REDU SPACE SERVICES
- RHEA SYSTEM
- ROVI-TECH
- SABCA
- SABENA AEROSPACE
- SAFRAN AERO BOOSTERS
- SAGITA
- SECO TOOLS BENELUX
- SHUR-LOK INTERNATIONAL
- SAMTECH, a SIEMENS Business
- SIRRIS
- SKYANGELS
- SOBELCOMP
- SONACA
- SPACEBEL
- TECHNICAL AIRBORNE COMPONENTS
- TECHNIFUTUR
- THALES ALENIA SPACE BELGIUM
- THALES BELGIUM
- TIMELINK MICROSYSTEMS
- UCL (Universite Catholique de Louvain)
- ULB (Universite Libre de Bruxelles)
- ULG (Universite de Liège)
- UMONS (Universite de Mons)
- UNAMUR (Universite de Namur)
- V2I
- VANHULEN
- VENYO EUROPE
- VITROCISSET BELGIUM
- VON KARMAN INSTITUT
- WAL-TECH
- WALPHOT
- WAN
- WOUTERS TECNOLUB
- WOW TECHNOLOGY
- WSL
- WSL LUX - ESA BIC REDU
- X-RIS



SKYWIN IN A NUTSHELL

Skywin is the aerospace cluster of Wallonia, french-speaking region of Belgium. Created in 2006 in order to boost the competitiveness of Walloon aerospace enterprises, Skywin helps Walloon industry and research actors to tackle the numerous technological and environmental challenges arising in today's quickly evolving Aerospace sector. Skywin gathers now more than 150 members from private industry sector or educational and research sector. These actors totalize roughly 7000 jobs and 1,6 billion Euros turnover, which makes Wallonia the place where 80% of the Belgian aeronautical activity is performed.

Skywin's objective is to foster and promote the technological advance of our aerospace industry and therefore to supply competitive products and services which are at the mainstay of business development.

Aeronautical companies
Turnover ± 1350 M€ - 5500 employees

Space companies
Turnover ± 250 M€ - 1500 employees

SKYWIN = AEROSPACE COMPANIES + UNIVERSITIES + RESEARCH CENTERS

Skywin Wallonie is a competitiveness cluster, i.e. an association of:

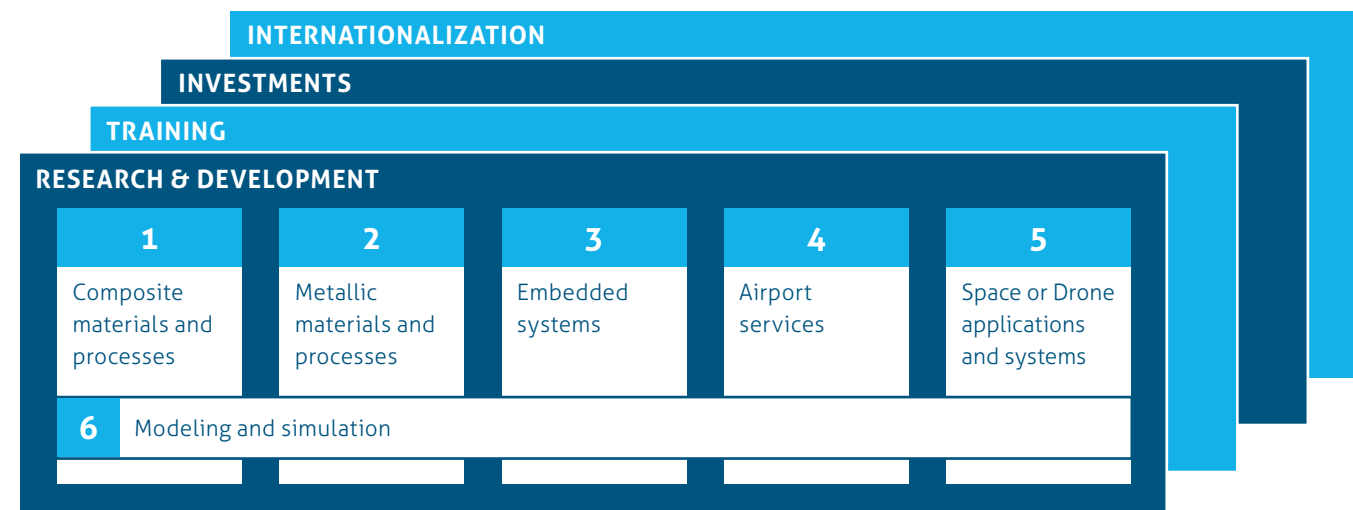
- Aerospace companies,
- Research centers,
- Universities and High Schools,

working in partnership under a common development strategy to generate synergies in the execution of innovative projects in the interest of the regional economy.

AT THE HEART OF EUROPE

Wallonia is ideally located in Europe: near to major capital cities and, as far as air transport is concerned, Wallonia has two regional airports : Liège and Charleroi. Those airports provide easy connections (both for passengers and freight) to major destinations in Europe and across the world.

STRATEGIC ORIENTATIONS



1. COMPOSITE MATERIALS AND PROCESSES

- Stabilize and develop skills
- Process automation
- Increase production capacity
- Importation of mature technologies

2. METALLIC MATERIALS AND PROCESSES

- Stabilize skills
- Automation and more competitive processes
- Develop new competences (Additive manufacturing, new alloy)
- Serve other industrial sectors

3. EMBEDDED SYSTEMS

- Identify all existing competencies in Wallonia
- Payloads/Sensors for Drones and associated electronics
- Capitalize skills for Health Monitoring
- Potential impact on other sectors : strong link with Space

4. AIRPORT SERVICES

- Technological network between the two Walloon airports and Walloon SME's
- Development of a range of services "Airport skills" at an international level

5. SPACE OR DRONE APPLICATIONS AND SYSTEMS

- Drive actors towards an integrated offer: e.g. mini satellite for Earth observation for emerging countries
- Shift the business model - strong market orientation
- Drone market

6. MODELING AND SIMULATION

- Transverse axis
- Keep the skills in Wallonia and participate to market growth
- Develop a multi-physics oriented offer

ENHANCING TECHNOLOGICAL ADVANCE OF WALLONIA IN AEROSPACE

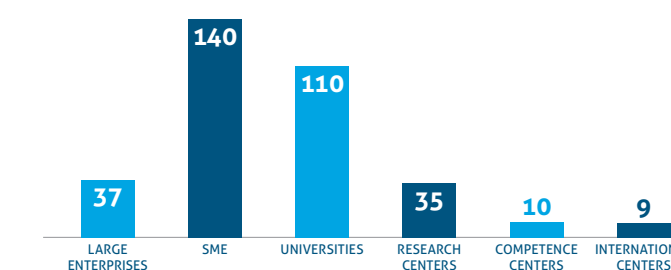
The first objective of Skywin is to implement and monitor projects. Approved projects may include one or several aspects:

- research and development (R&D),
- investment,
- trade,
- foreign investment,
- training.

These projects must have an economic purpose: generate new business and create sustainable jobs in Wallonia. The focus is particularly set on SME's: a necessary condition to approve a R&D project is that its consortium has to include at least two companies (including min. 1 Walloon SME) and two research units belonging to different institutions.

Through the last 18 Calls* for Projects, Skywin is currently managing 72 R&D, Investment or Training projects. These projects totalize about 300 contributions from innovation actors in Wallonia, led by Industry (with a strong involvement of our SME's). The total budget of those projects is nearly 225 M €.

PROJECT'S PARTICIPATION (FROM 1ST TO 18TH CALL)



* Situation of end 2016

WALLOON AERONAUTICS INDUSTRY

Turnover ± 1350 M€* - 5500 employees

| |
|-------------------------------------|
| Aircraft Engines |
| Engine Test Cells |
| Structure & Systems |
| Equipment |
| Maintenance Repair & Overhaul (MRO) |
| Components & Subcontracting |
| Computer Aided Engineering |
| Airport Services |
| Research & Development |
| Training & Education |

WALLOON SPACE INDUSTRY

Turnover ± 250 M€* - 1500 employees

| |
|-----------------------------------|
| Ground Equipment |
| Access to Space |
| In Orbit |
| Exploitation & Space Applications |
| Space Education |

