C.J.J. Eldering (Niels)
ESA Technology Transfer Programme Office

RSM Honours Programme – Rotterdam, 11-11-2016
THE EUROPEAN SPACE AGENCY

“To provide for and promote, for exclusively peaceful purposes, cooperation among European states in space research and technology and their space applications.”

Article 2 of ESA Convention
THE EUROPEAN SPACE AGENCY

ESA FACTS & FIGURES

- Over 50 years of experience
- 22 Member States
- Eight sites/facilities in Europe, about 2200 staff
- 5.2 billion Euro budget (2016)
- Over 80 satellites designed, tested and operated in flight
ALL ABOUT SPACE

ESA is one of the few space agencies in the world to combine responsibility in nearly all areas of space activity:

- Space science
- Human spaceflight
- Exploration
- Earth observation
- Launchers
- Navigation
- Telecommunications
- Technology
- Operations
ESA BUDGET FOR 2016

ESA Activities and Programmes

Programmes implemented for other Institutional Partners

Total ESA budget for 2016: 5.25 B€
THE EUROPEAN SPACE AGENCY

ESA HQ (Paris)

ESTEC (Noordwijk)

EAC (Cologne)

ESOC (Darmstadt)

ESRIN (Rome)

Salmijaervi (Kiruna)

Brussels

Redu

Toulouse

Cebreros, Villafranca

ESAC (Madrid)

ECSAT (Harwell)

Houston

Washington

Santa Maria

Maspalomas

Perth

New Norcia

Malargüe

Kourou
ESA 2016 BUDGET BY DOMAIN

Budget 2016
5.25 B€

M€: Million Euro
*includes Programmes implemented for other Institutional Partners

Launchers
20.0%, 1051.2 M€

Human Spaceflight
7.0%, 365.1 M€

Telecom & Integrated Applications*
6.8%, 359.3 M€

Navigation*
11.6%, 609.5 M€

Robotic Exploration & Prodex
3.7%, 192.8 M€

Technology support*
1.9%, 99.5 M€

Space Situational Awareness
0.2%, 12.9 M€

Earth Observation*
30.5%, 1603.5 M€

European Cooperating States Agreement (ECSA)
0.1%, 4.0 M€

Basic Activities
4.4%, 232.1 M€

Scientific Programme
9.7%, 507.9 M€

Associated with General Budget
4.1%, 214.8 M€

Associated with General Budget
4.1%, 214.8 M€

Basic Activities
4.4%, 232.1 M€

Scientific Programme
9.7%, 507.9 M€

Associated with General Budget
4.1%, 214.8 M€

Earth Observation*
30.5%, 1603.5 M€

European Cooperating States Agreement (ECSA)
0.1%, 4.0 M€

Basic Activities
4.4%, 232.1 M€

Scientific Programme
9.7%, 507.9 M€

Associated with General Budget
4.1%, 214.8 M€

Associated with General Budget
4.1%, 214.8 M€
ESA’S ROLE AS CATALYST

BIRTH OF COMMERCIAL OPERATORS
THE EUROPEAN SPACE AGENCY

ACCESS TO SPACE

LAUNCHER VEHICLES
THE EUROPEAN SPACE AGENCY

ACCESS TO INFRASTRUCTURE

SATELLITE INFRASTRUCTURE
THE EUROPEAN SPACE AGENCY

ACCESS TO RESEARCH

INTERNATIONAL SPACE STATION
SPACE = ACROSS ALL INDUSTRIES
OUR MISSION

INSPIRE and FACILITATE
the use of space technology, systems and know-how for non-space applications.

STRENGTHEN EUROPEAN INDUSTRY
by identifying new business opportunities for providers of space technology and systems as well as enhancing its know-how and competitiveness.

BOOST LOCAL ECONOMY
By creating jobs, investing in start-ups and supporting sustainable innovation.
REDEFINING HIGH TECHNOLOGY

AUTONOMOUS MAINTENANCE

EXXFire providing maintenance free fire extinguisher solutions based on rocket technology!
MORE THEN JUST NAVIGATION

LBS, EARTH OBSERVATION, BIG DATA

Knowing when to go...
CHANGING REAL ESTATE SERVICE

OFFERING SERVICE TO PREDICTED DEMANDS
CHANGING PARKING SOLUTIONS

FREEING UP CORPORATE PARKING SPACES

ParkBee
PART 2: INFLUENCE OF ESA’S ENTREPRENEURIAL ACTIVITIES
OUR MISSION

3 Questions:

- Why Entrepreneurs?
- Why do we do it?
- How does this work?
OUR MISSION

3 Questions:

– Why Entrepreneurs?

– Why do we do it?

– How does this work?
OUR MISSION

INSPIRE and FACILITATE
the use of space technology, systems and know-how for non-space applications.

STRENGTHEN EUROPEAN INDUSTRY
by identifying new business opportunities for providers of space technology and systems as well as enhancing its know-how and competitiveness.

BOOST LOCAL ECONOMY
By creating jobs, investing in start-ups and supporting sustainable innovation.
OUR MISSION

3 Questions:

- Why Entrepreneurs?
- Why do we do it?
- How does this work?
THE INCUBATION ARENA

NATURE OF INPUT

NEW TECHNOLOGY BASED FIRMS (NTBFs)

OBJECTIVES

High-Tech Starter

Fertile Technology

Business Incubator
THE INCUBATION ARENA

ESA, National Government (e.g. ministry of economic affairs)

SPACE BUSINESS PARK

Technology Transfer, Economic Growth, Jobs

High-Tech Starter

Fertile Technology

Business Incubator
REINFORCING LOOP 1

NEW TECHNOLOGY BASED FIRMS (NTBFs)

High-Tech Starter
Fertile Technology
Business Incubator
REINFORCING LOOP 2

ESA, National Government (e.g. ministry of economic affairs)

SPACE BUSINESS PARK

Technology Transfer, Economic Growth, Jobs

High-Tech Starter
Fertile Technology
Business Incubator
ECONOMIC ACTIVITIES: SERVICES

Primary Activity
The Innovation Process: New Product / Service Development

Secondary Activities
Finance  IPR  Recruitment  Marketing
THE 3D INCUBATION ARENA
EUROPEAN NETWORKS

Spinning off space technology into non-space uses

- ESA BIC in operation (2015)
- RSA BIC to come
- ESA Technology Transfer Broker

Creating jobs
Boosting Europe’s global competitiveness
Investing in local economies
SPACE FOR EUROPE'S FUTURE

Business Incubation
- 15 ESA Business Incubation Centres (BICs) in 12 countries
- 300+ start-up companies created
- 100+ start-ups nurtured each year
- Thousands of new high-tech jobs creating regional growth

Broker Network
- 15 ESA Technology Transfer Brokers throughout Europe
- 300+ successful technology transfers
- Supporting national industry to tap into available ESA space technology

Intellectual Property Portfolio
- 150 leading-edge inventions
- 450 ESA patents
- All ready for commercialisation by European industry

Investment Support
- Venture capital fund
- Investment fora and training

Achievements and growth
- 2003: 50 companies
- 2006: 100 companies
- 2009: 200 companies
- 2013: 300 companies
- 2017: 500 companies
- 2021: 1000 companies
- 2022: 200 new start-ups
PART 2: WHAT IS THE OFFER?
ESA BUSINESS INCUBATION

ENTREPRENEURSHIP AS ENGINE FOR TT

ESA BIC Noordwijk
BENEFITS OFFERED BY ESA BICS

- Unique ESA technical support & expertise
- Business development support & advice
- Office space & shared facilities
- € 50K funding
- Door opener to international networks of industry players, research institutes and universities
- Network of start-ups
- Hands-on customised assistance
- * Duration 6 weeks from proposal to contract