You need more Space

Viewing beyond

Frank M. Salzgeber

Head of Technology Transfer Programme Office

frank.salzgeber@esa.int

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www.esa.int/bic

@franksalzgeber

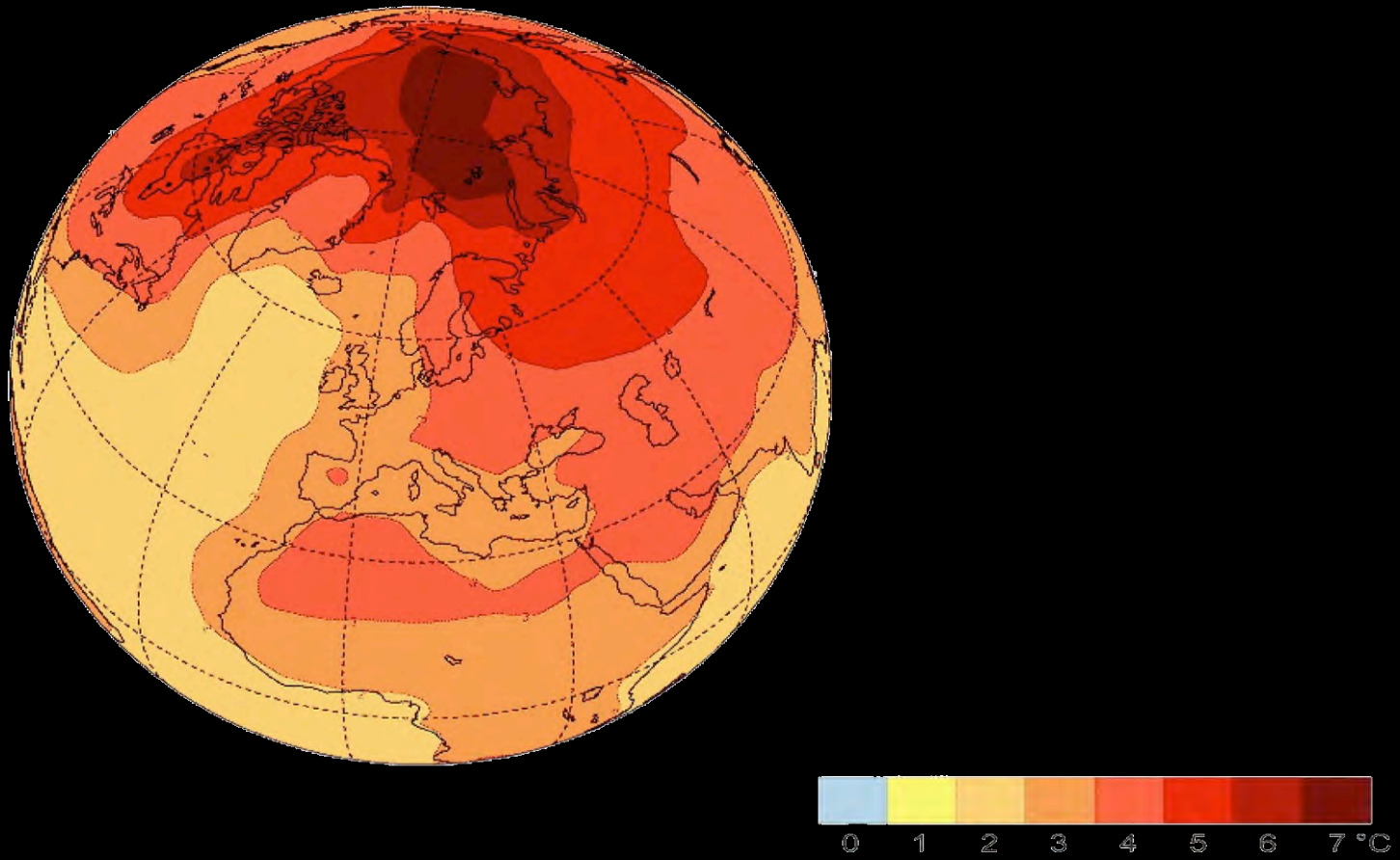
esa

Space solutions

Landing on Comet 67 P/ Churyumov- Gerasimenko

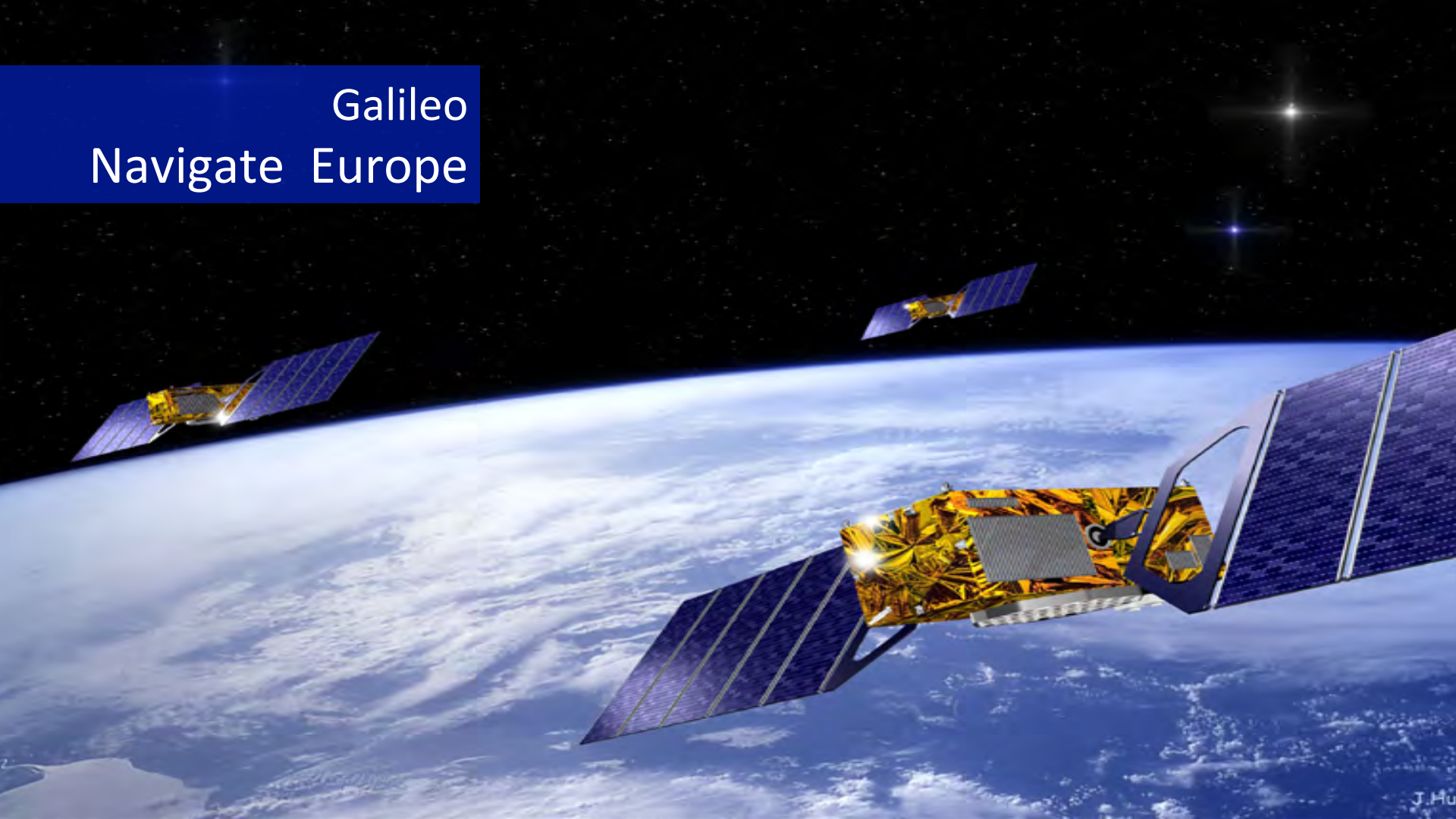
Water on Mars?

Searching for live


0
1
2
3
4
5
6
7 °C

Telecommunication and connecting people

Galileo
Navigate Europe



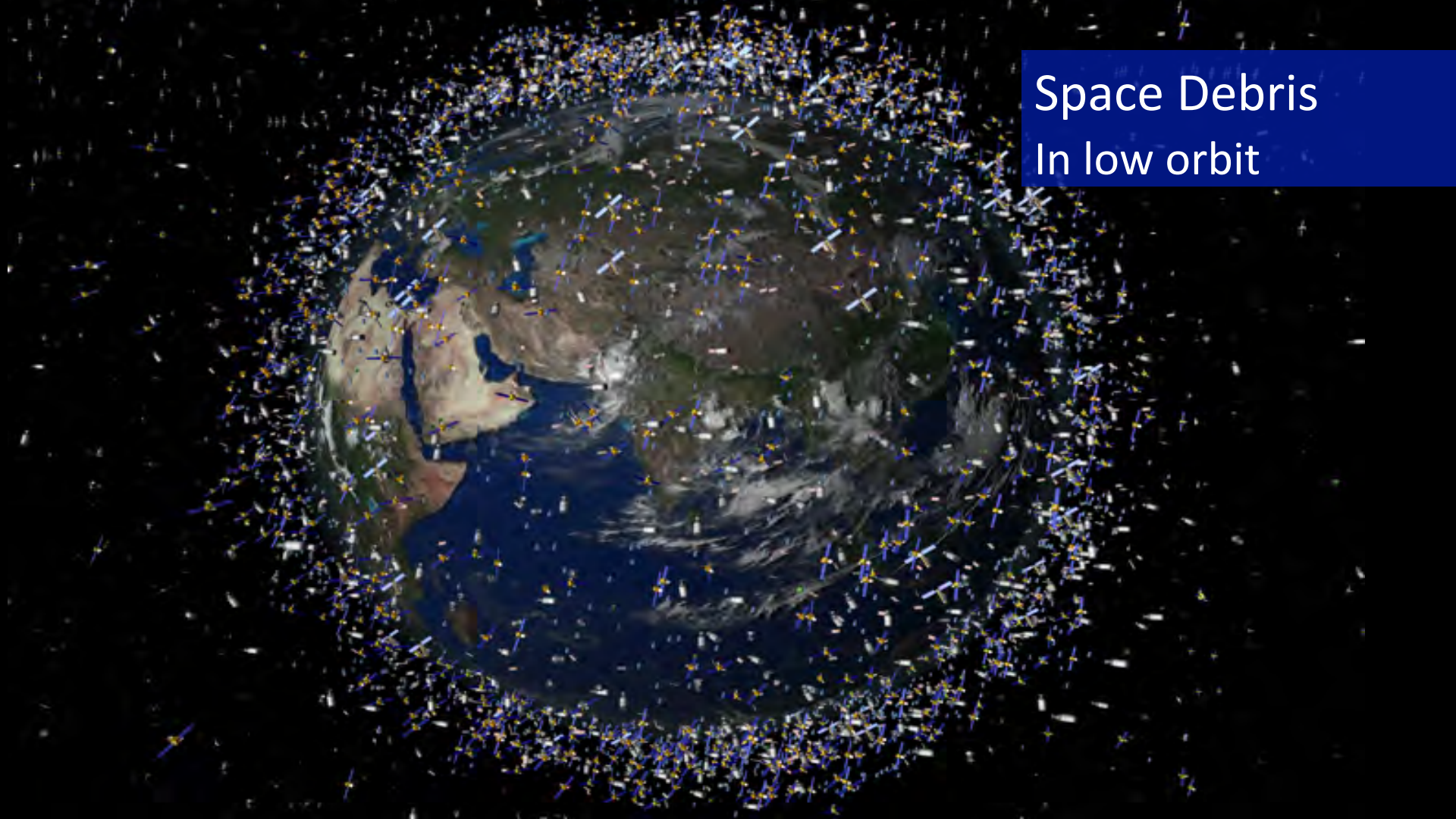
Just rocket science

Ariane 5 and Soyuz

Home in the sky

The best job of the world

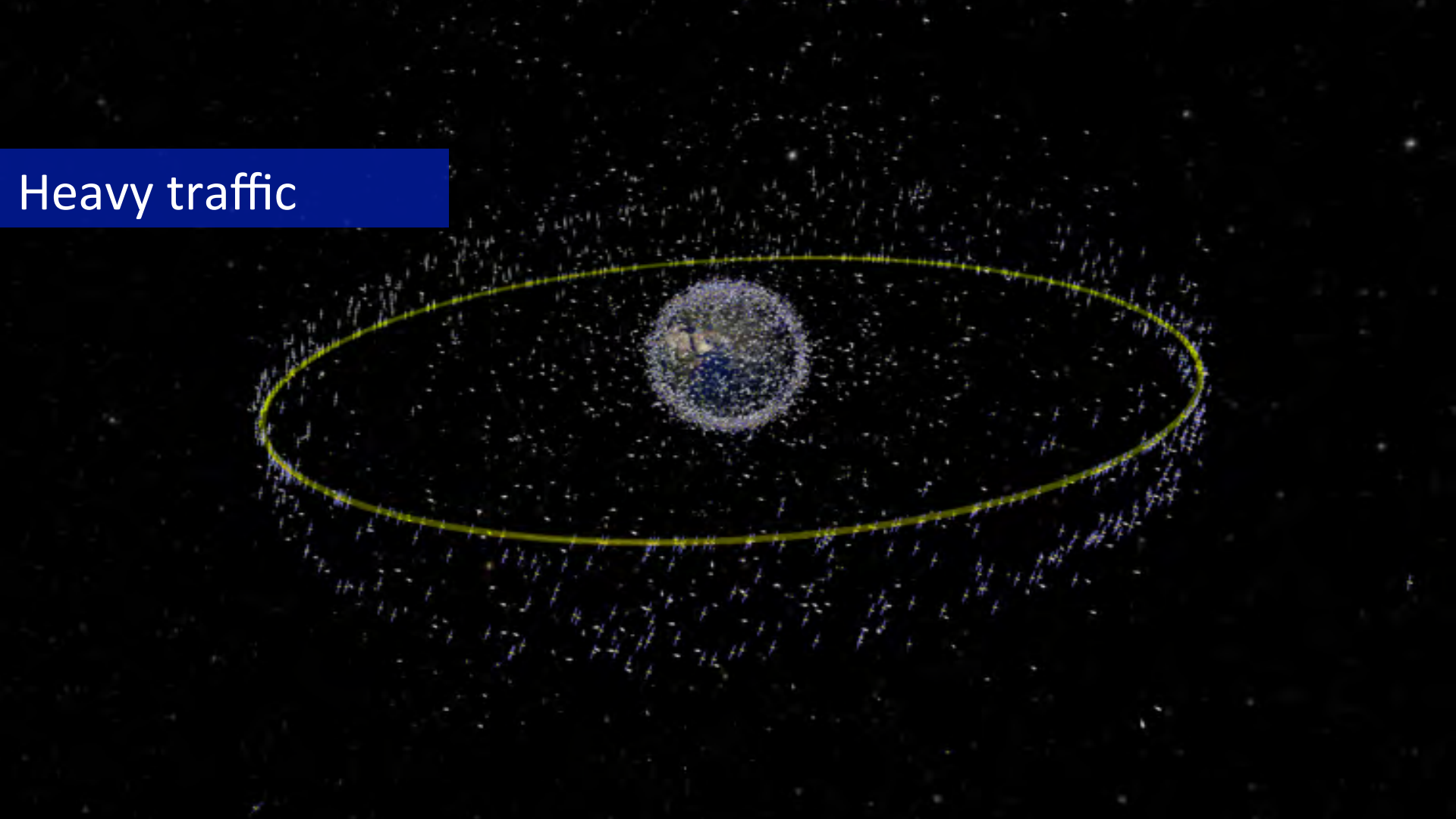
Best view of the world



Space Debris

In low orbit

Heavy traffic



Moon village
Ready for the gold rush

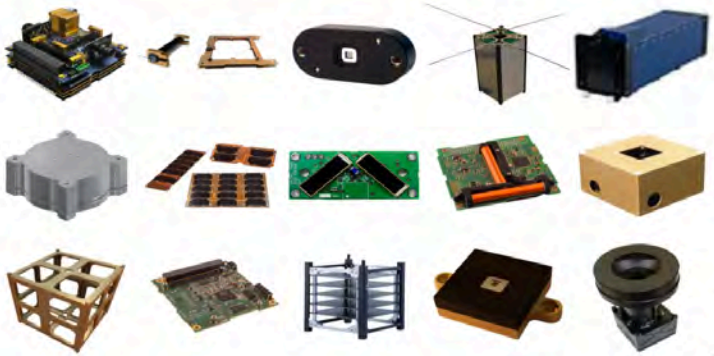
Space today
99% of the world population

CubeSatShop

PRODUCTS VENDOR INFORMATION HOW IT WORKS FAQ INQUIRY LIST (0)

ONE-STOP WEBSHOP STANDARDIZED PRODUCTS AVAILABLE AS OFF-THE-SHELF MULTIPLE VENDORS

- Antenna systems
- Attitude actuators
- Attitude sensors
- Cameras & payloads
- Command & data handling
- Communication systems
- CubeSat kits & buses
- Ground stations
- Integrated ADCS
- Launch adapters
- Propulsion & pressurisation
- Solar panels & power systems
- Ground support equipment
- CubeSat Structures
- Training & simulators



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SpaceX releases deck camera footage of Falcon 9 almost-landing

Precision touch-down is still a tremendous achievement—but it needs more touch.

by Lee Hutchinson - Apr 16, 2015 11:00pm CEST

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SpaceX failed again with landing trial
Launcher absolves crash landing

Suche

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USA-Raumfahrt-Unternehmen-Luftfahrt: SpaceX scheitert abermals mit Landeversuch

NEWSTICKER USA-RAUMFAHRT-UNTERNEHMEN-LUFTFAHRT

15.04.15

SpaceX scheitert abermals mit Landeversuch

Trägerrakete absolviert Bruchlandung

0 Empfehlen 0 Twitern 0 g+1 0

impulse FÜR ALLE, DIE ETWAS UNTERNEHMEN

Geld, Geld, Geld

Wie Sie an Geld kommen – ohne Bank

DER HOME & LIVING-STORE DER WELT

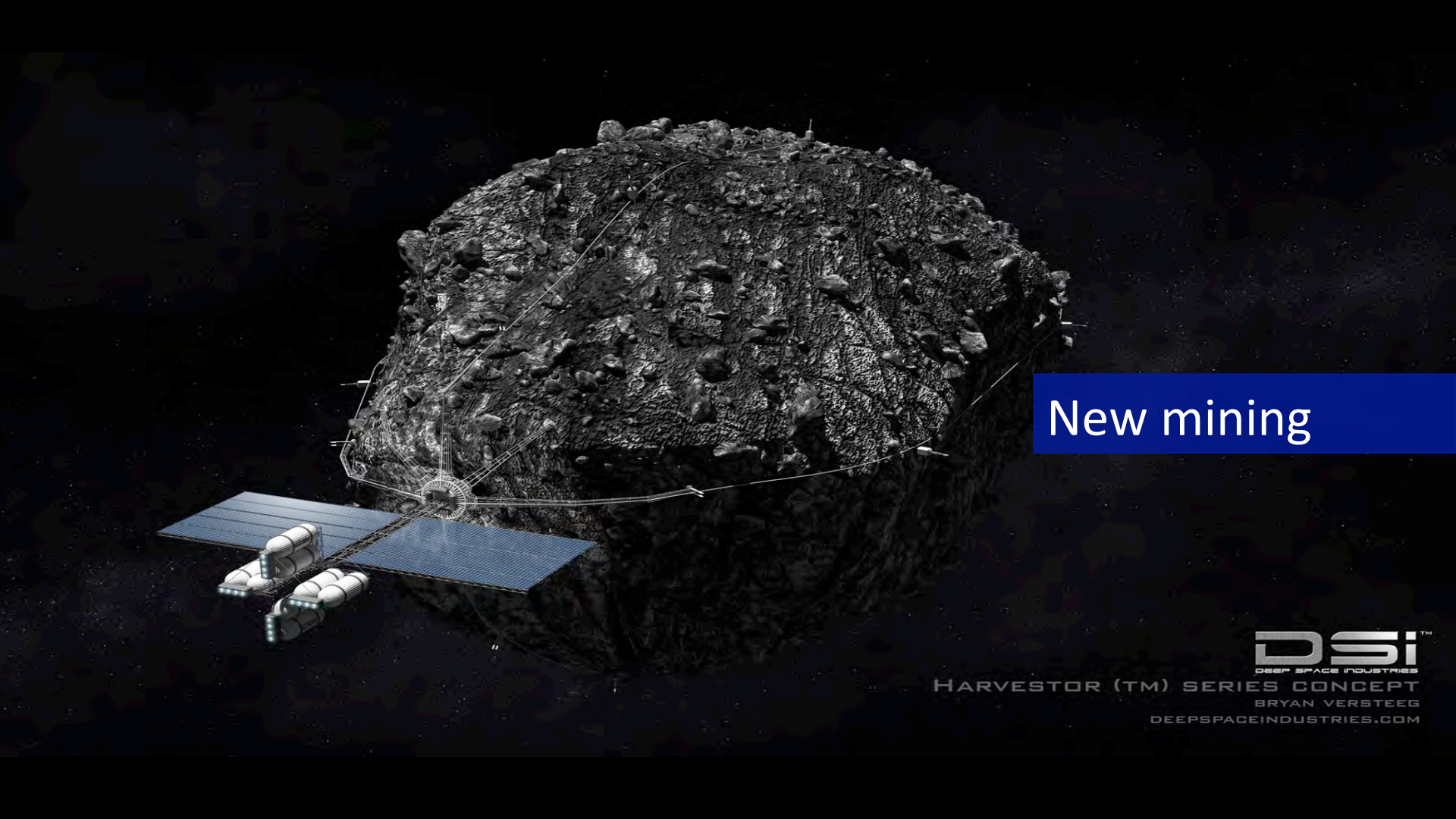
ICONIST

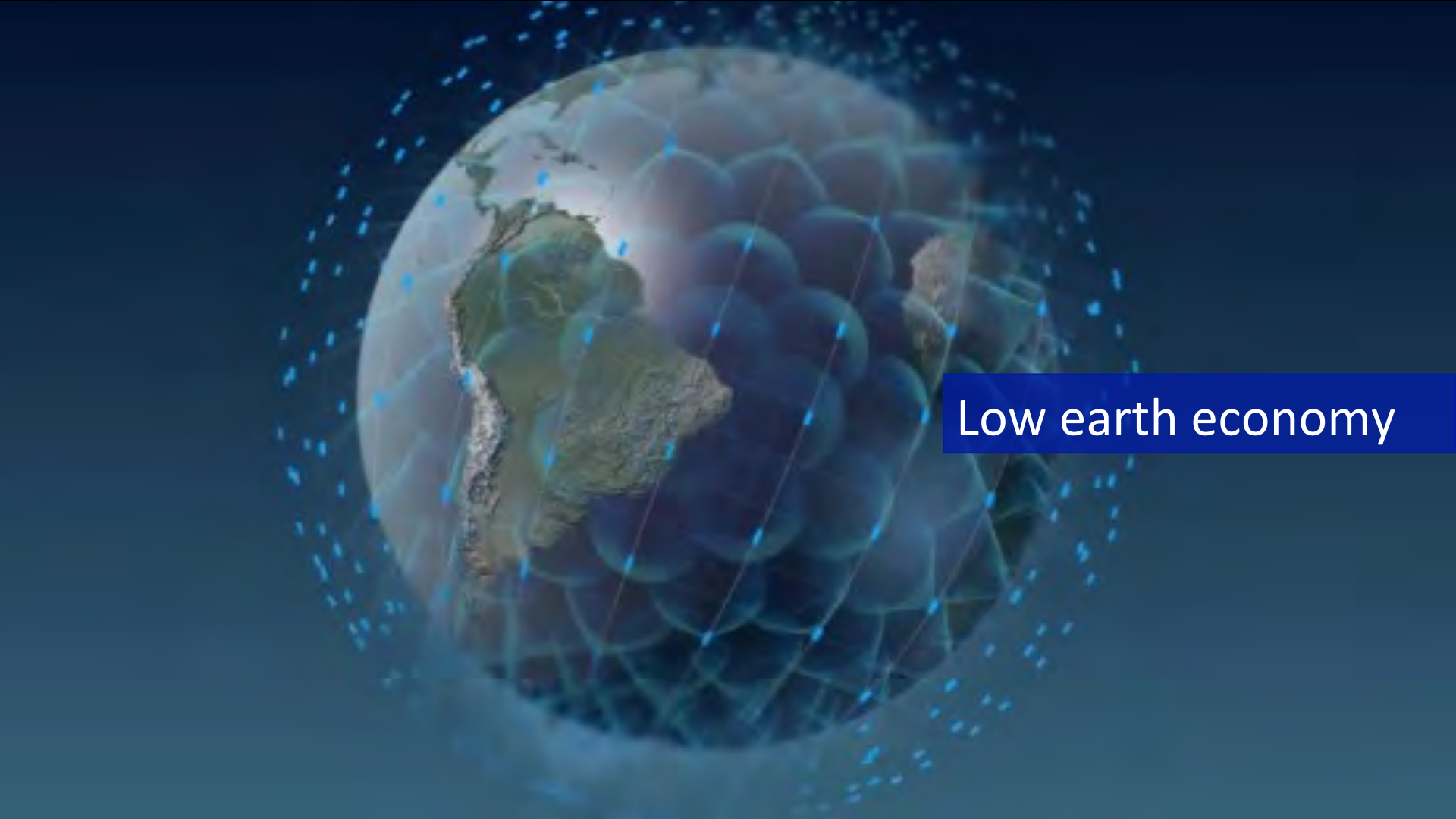
Elon Musk
@elonmusk

Folgen

@ID_AA_Carmack Full RUD (rapid unscheduled disassembly) event. Ship is fine minor repairs. Exciting day!

New mining


DSI™
DEEP SPACE INDUSTRIES
HARVESTOR (TM) SERIES CONCEPT
BRYAN VERSTEEG
DEEPSPACEINDUSTRIES.COM



Low earth economy

BUILDING EUROPEAN SPACETECH START-UP ECO SYSTEM

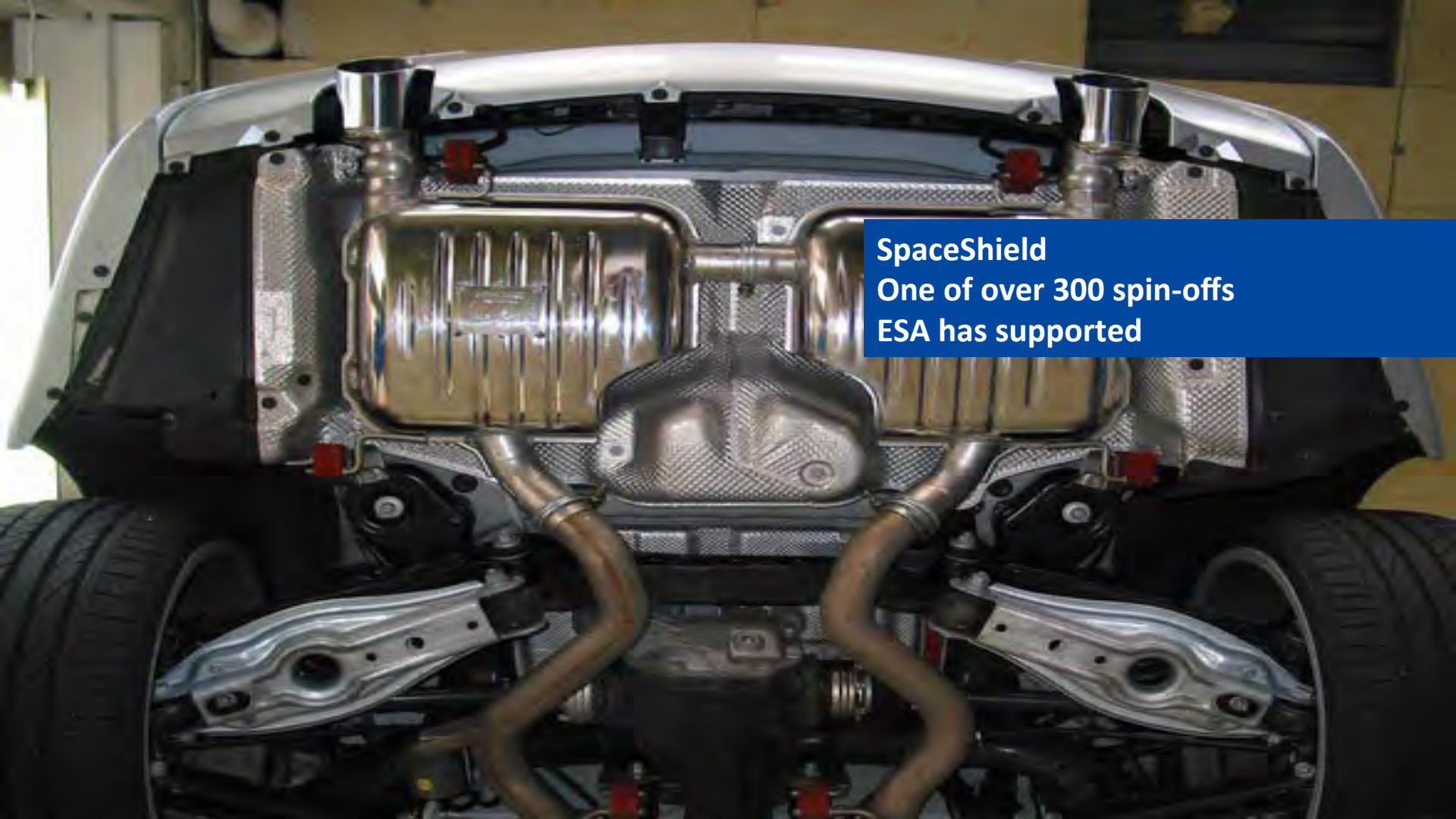
ESA PATENT PORTFOLIO

150 inventions covered by **450** patents

BROKER NETWORK

15 BROKERS

320 TRANSFERS
Studies
Demonstrators



SpaceShield
One of over 300 spin-offs
ESA has supported

Space Breaks
One of over 280 spin-offs
ESA has supported

BUILDING EUROPEAN SPACETECH START-UP ECO SYSTEM

ESA PATENT PORTFOLIO

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Studies

Demonstrators

Other ESA Offers

EO

Copernicus

SME

IAP

AMBASSADORS

App Camps

Competitions

Prizes

ActInSapce

BUSINESS INCUBATION

16 (19) CENTRES

120 (150+) new start-ups p/y

450+ SUCCESSES

INVESTMENT SUPPORT

Investment training

EBAN

VCs

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SME

IAP

AMBASSADORS

App Camps

Competitions

Prizes

ActInSapce

BUSINESS INCUBATION

16 (19) CENTRES

120 (150+) new start-ups p/y

450+ SUCCESSES

INVESTMENT SUPPORT

Investment training

EBAN

VCs

150 BAs Networks In 50 countries

4 VC Networks

2 Mentor networks

1 Family office network

Industry partners

20 Biggest EC TT offices

Int. Space TT Offices

TT for Fusion

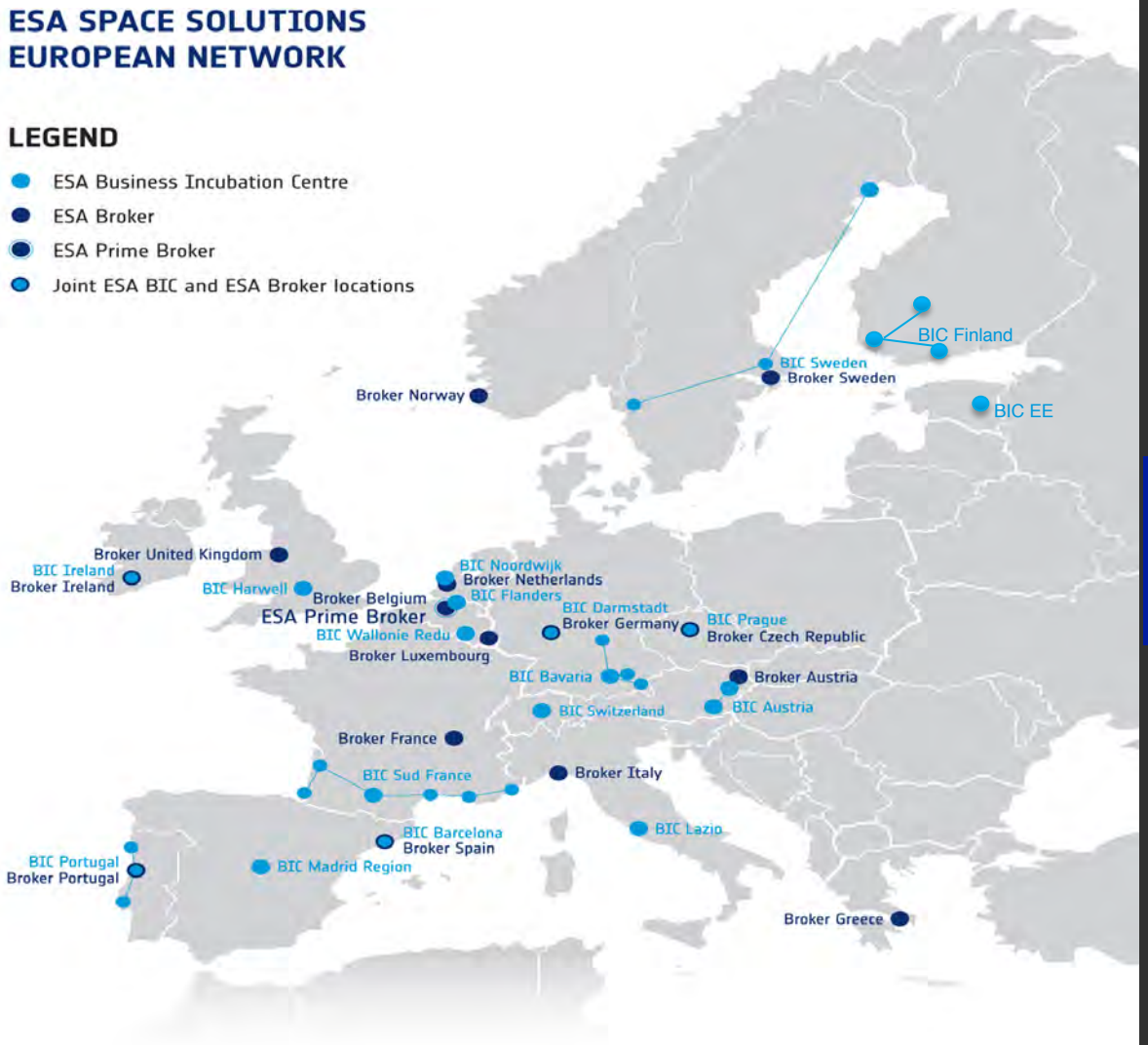
160 Incubators and Accelerators

59 Universities

15 Research centers

1000 external Experts

16 Agencies



esa

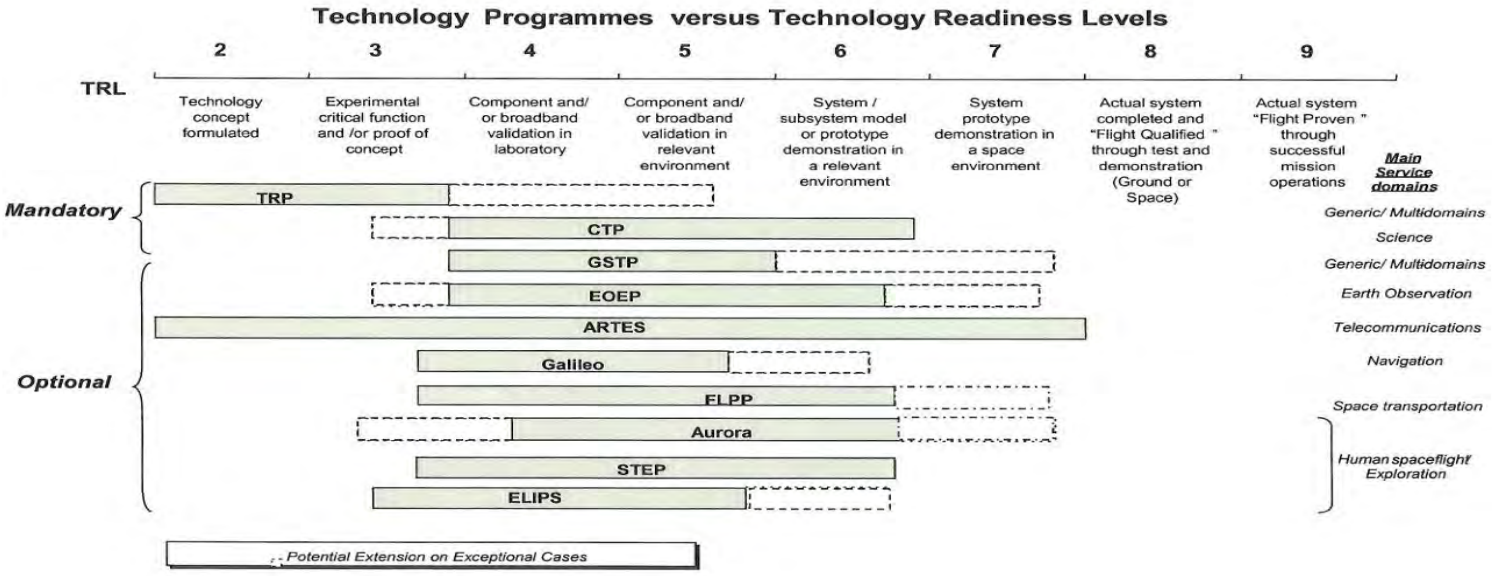
Space solutions

World biggest Ecosystem for Space Entrepreneurs

Store History
One of over 320 spin-offs
ESA has supported

Contributions to ESA Innovation and Space 4.0

ESA Technology Programme versus Technology Readiness Levels



industry portal

esa

Archive

SPACE ECONOMY

Innovation and efficacy of public-funded space research are called upon to sustain growth and competitiveness in Europe as well as to support employment and entrepreneurial capacities. read more

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LATEST NEWS

More News

ESA Grand Challenge rewards solutions to complex problems

The ESA Grand Challenge is a contest aimed at creating a new European ecosystem of entrepreneurs and start-up companies competing to dev...

Adoption of the ESA grand Challenge Statute

At the recent Ministerial Council meeting held in Lucerne, Switzerland on 30 November 2016, a high level Statute was adopted alongside t...

Talking about space for sustainability

AIPAS (Associazione delle Imprese per le Attività Spaziali) in collaboration with several Italian institutions dealing with space affair...

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ESA Grand Challenge

Completed ESA Studies

Planting a tree

esa business incubation centre

Bavaria

119
Startup´s Incubated

> 1600
Hightech Jobs Created

> 140 Mio. €
Total Annual Turnover

44 Mio. €
VC Investment 2016

89 %
Survival Rate after 5 Years

A brand by AZO

esa business incubation centre

Bavaria

119
Startup´s Incubated

> 1600
Hightech Jobs Created

> 140 Mio. €
Total Annual Turnover

44 Mio. €
VC Investment 2016

89 %
Survival Rate after 3 Years

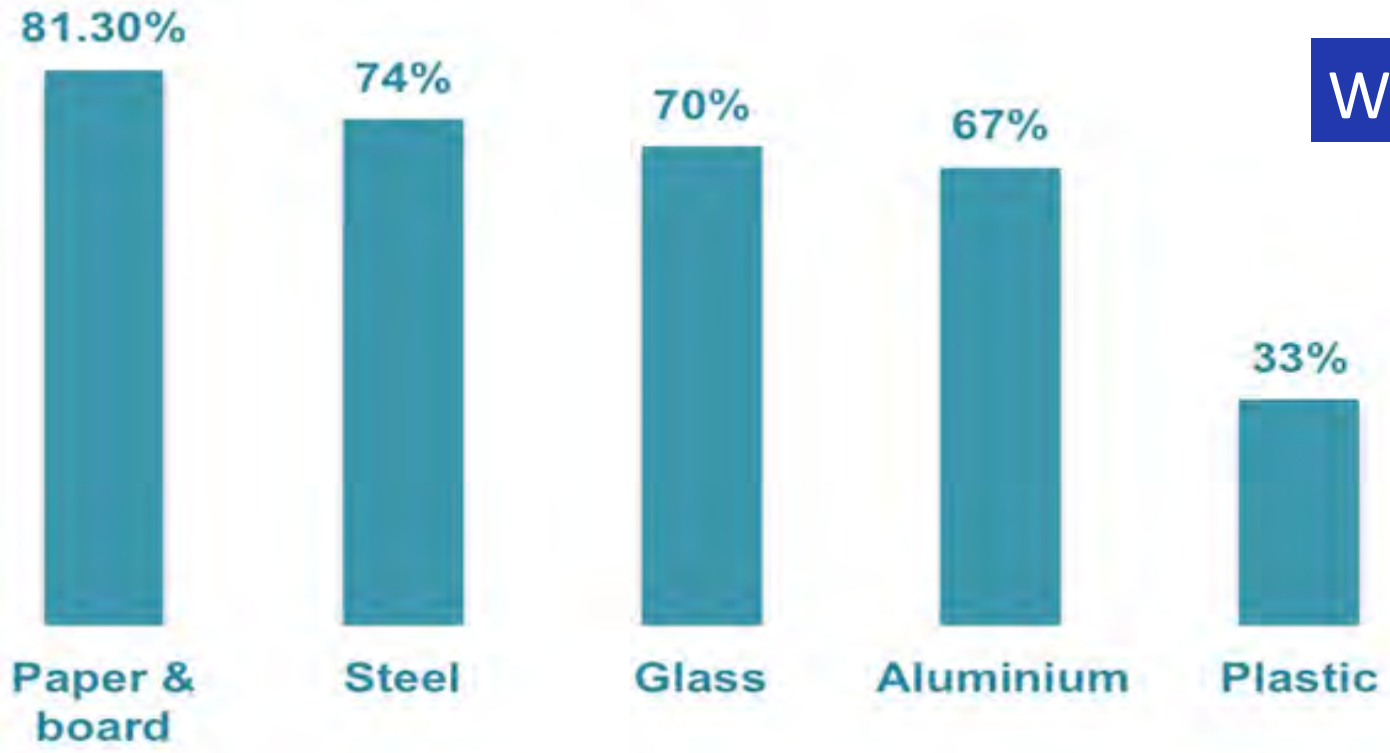
A brand by AZO

“Dad, what is this?”

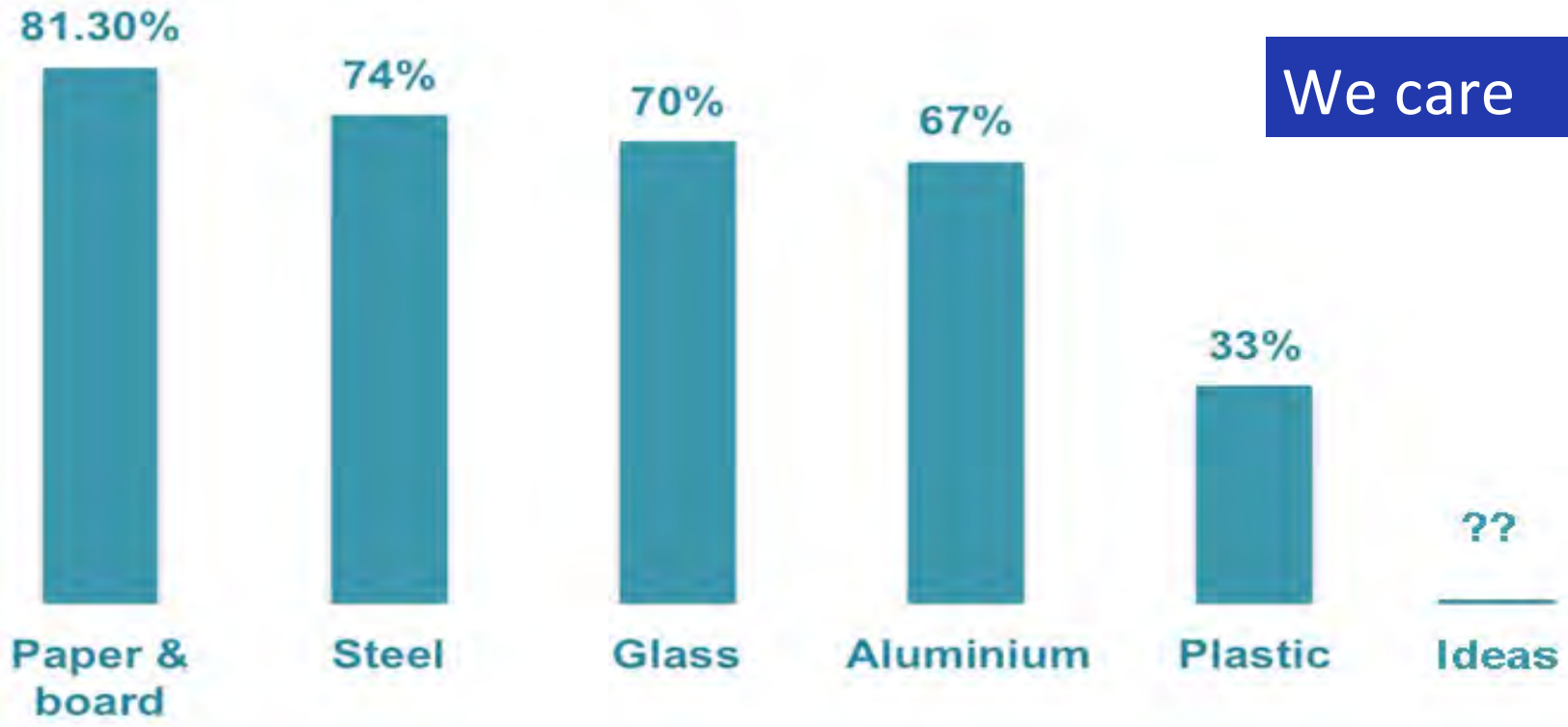
Lucas Salzgeber, 5 years

1

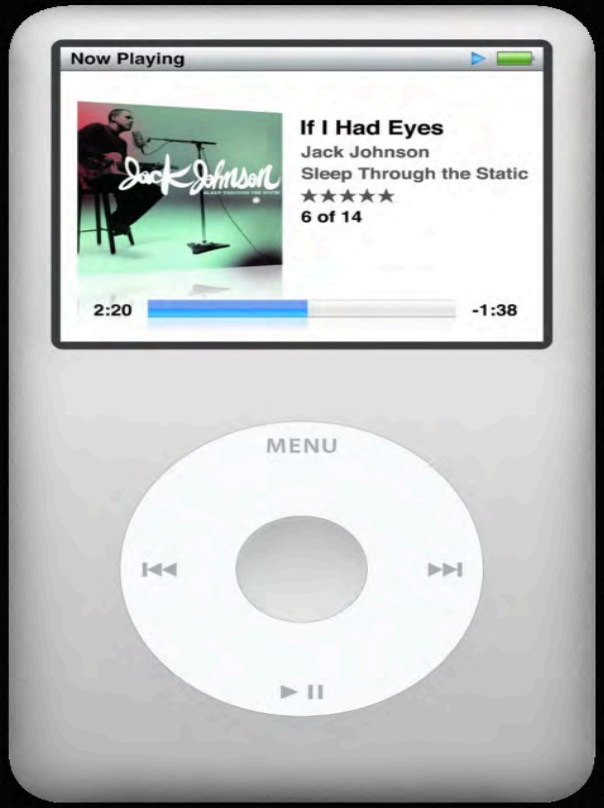
We care



We care


81.30%
74%
70%
67%
33%
??
Paper & board
Steel
Glass
Aluminium
Plastic
Ideas

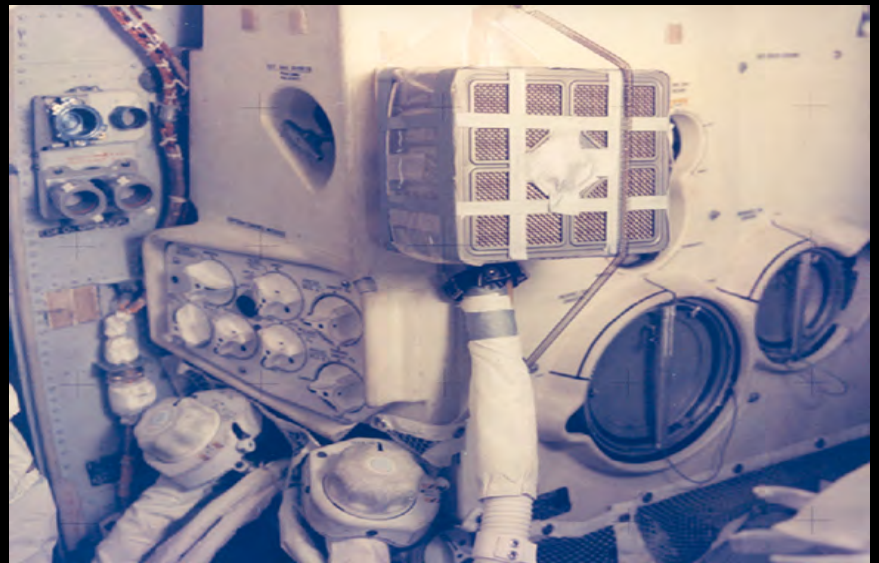
ideas


Now Playing
Jack Johnson
If I Had Eyes
Jack Johnson
Sleep Through the Static
★★★★★
6 of 14
2:20
-1:38
MENU

Reuse 9 out of 10

2

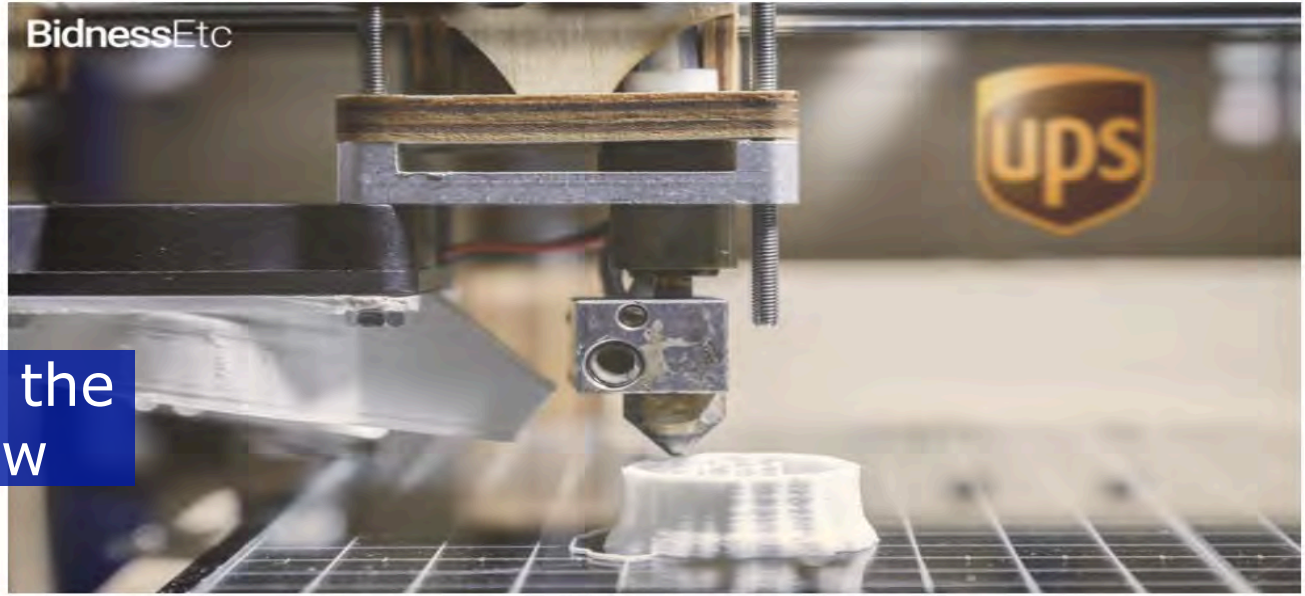
Advanced manufacturing



Don’t buy a cow

United Parcel to Offer On-Demand 3D Printing

Freight & Shipping |
By Hassan Ali
May 19, 2016 at 1:44 pm EST



UPS joins hands with SAP to offer on-demand 3D manufacturing services

Business of today is the business of tomorrow

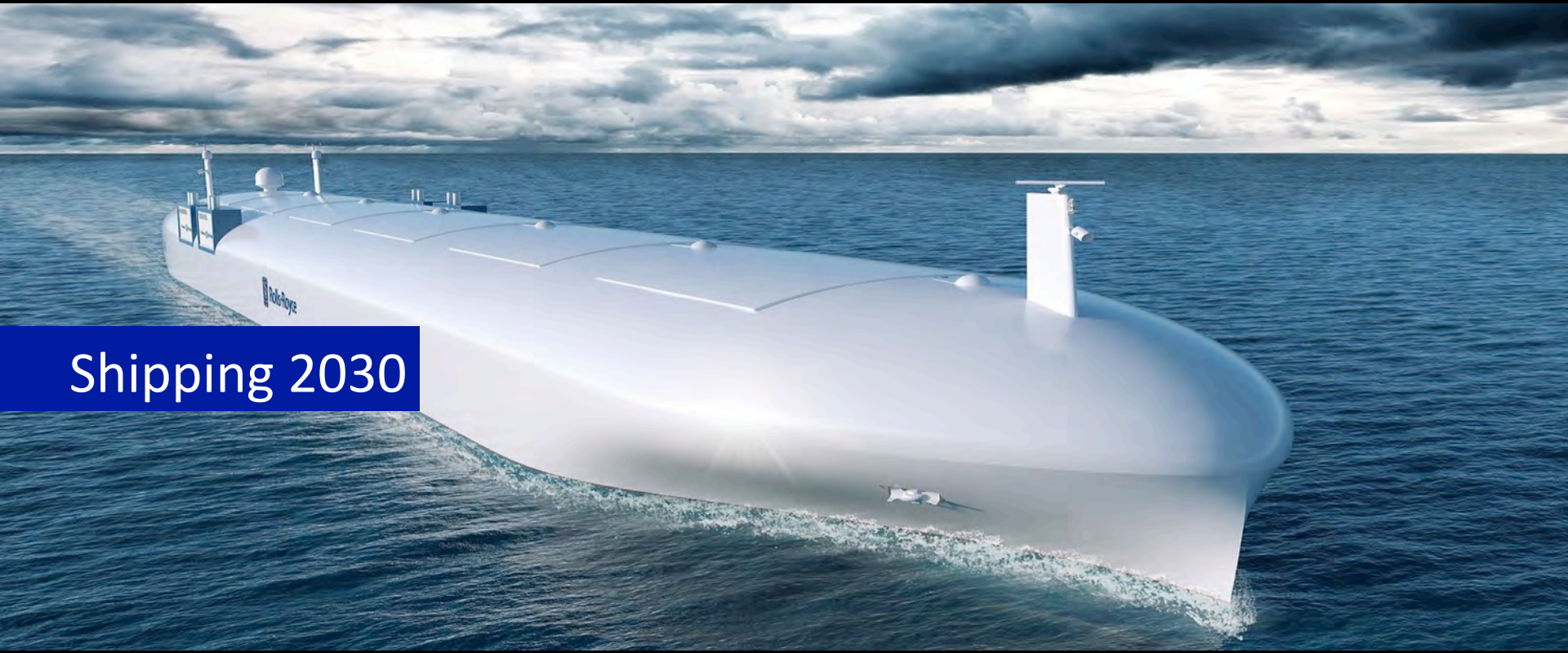
productivity

3

Artificial Intelligence

Gerät: RA6.6 Kamera: RR66 Messstelle: ISM12345 Datum: 0000-00-00
Objekt: B. Barnsteiner Zeit: 09:55:37 Abstand: 100,0m v:666 km/h

YC63 FZS



Shipping 2030

FleetMon
Tracking the Seven Seas

Shipping 2017

Ocean Space

Building an aircraft

Building an aircraft

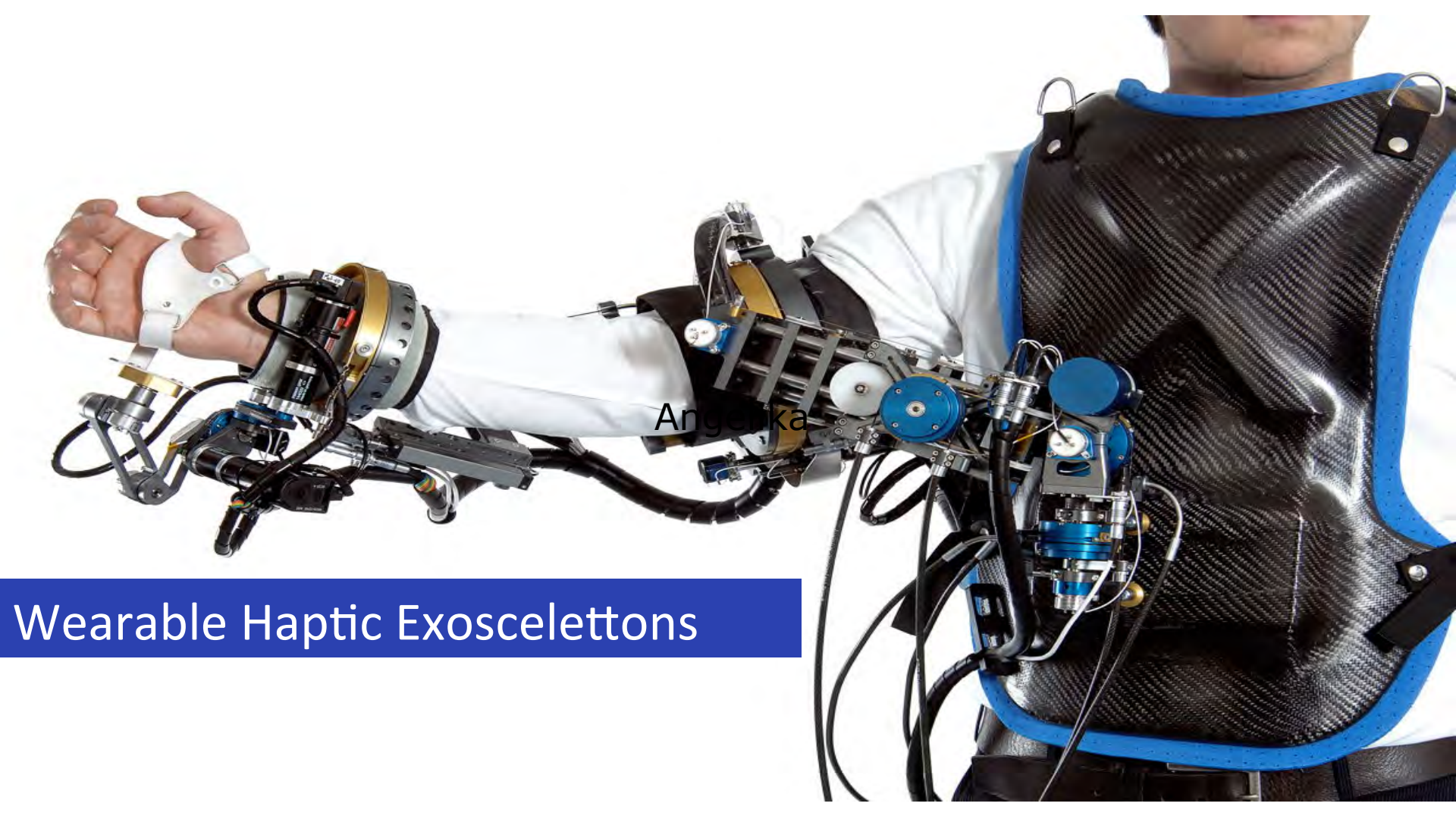
This vision becomes reality...

lilium

4

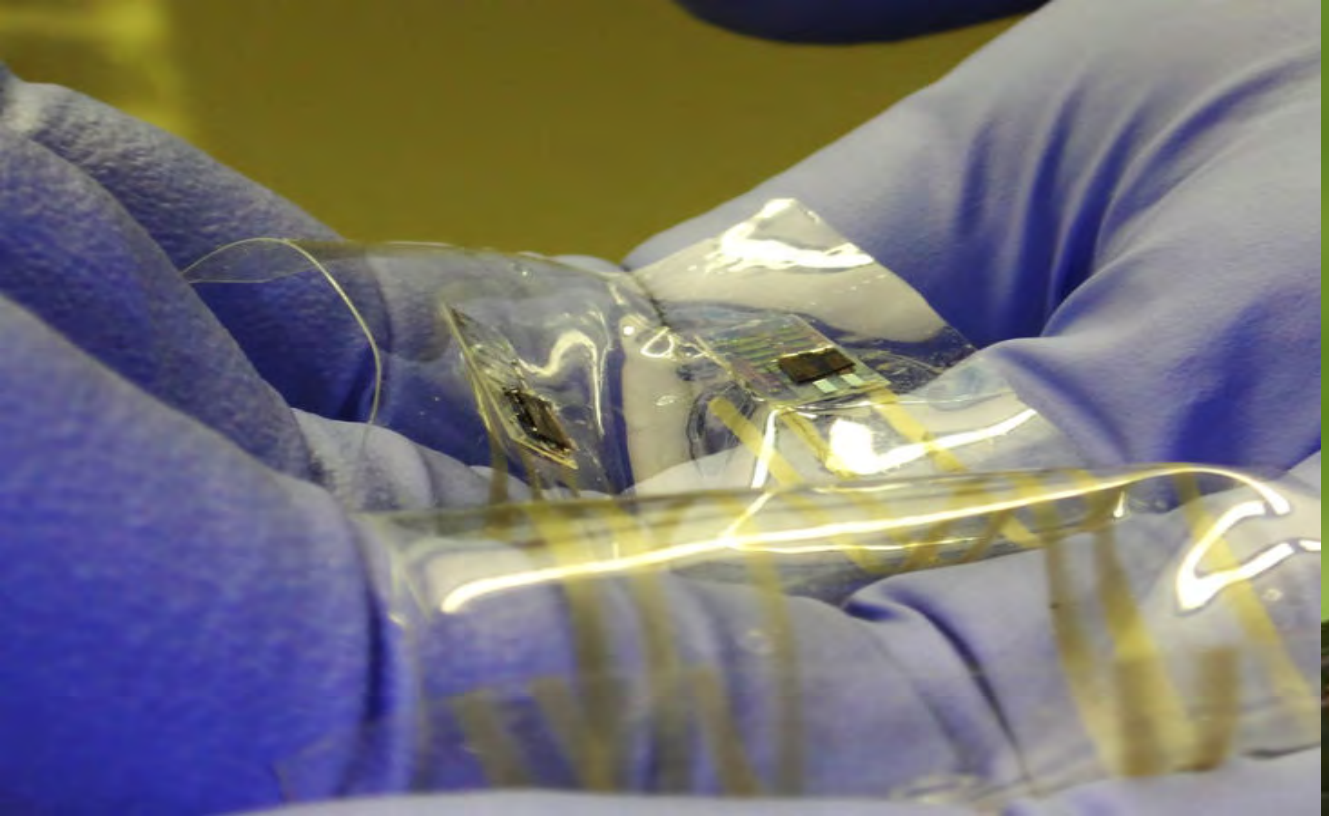
Daily robotics

Daily robotics



Wearable Haptic Exoscelettons

Angelika



Wearable Technologies

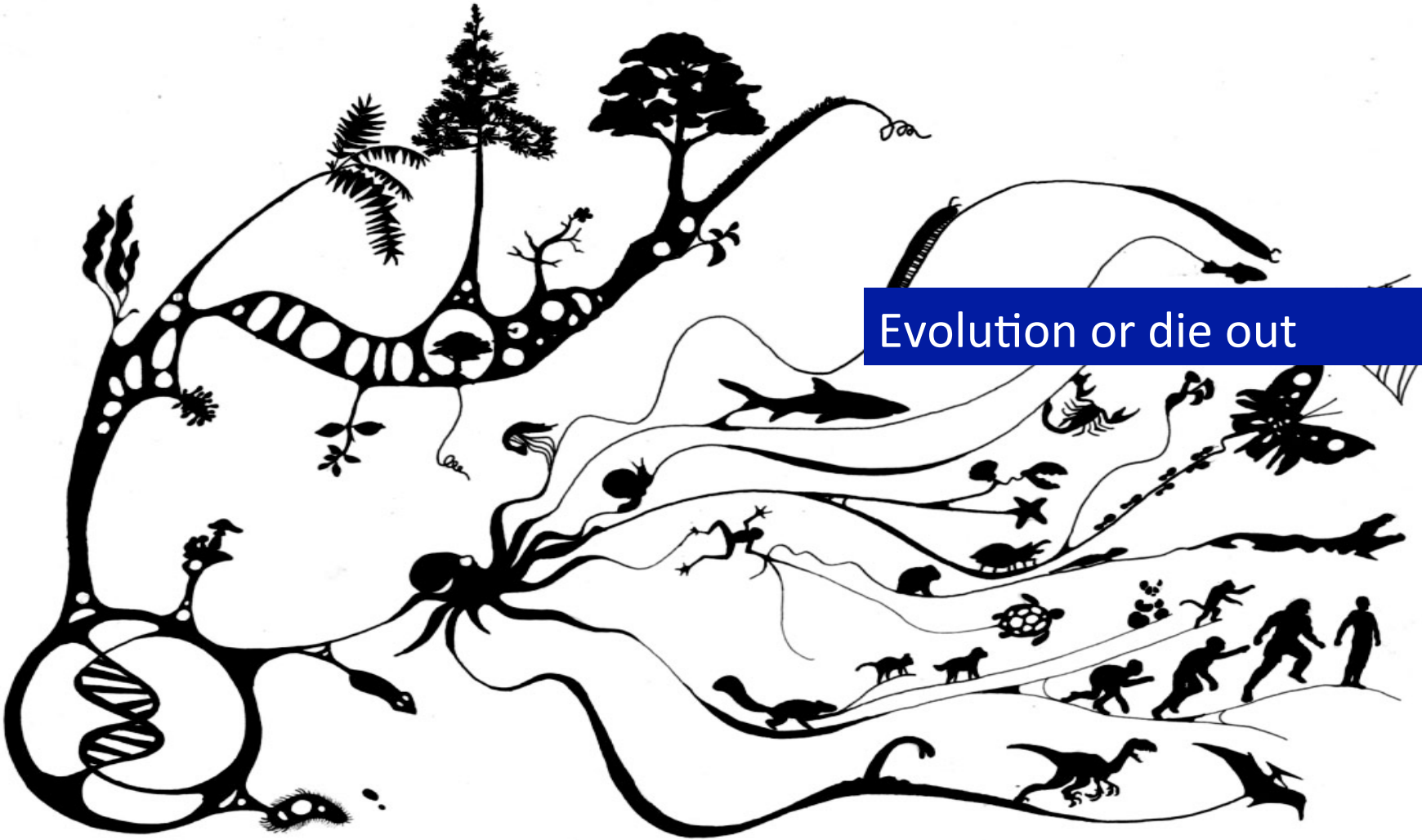
Working with machines

5

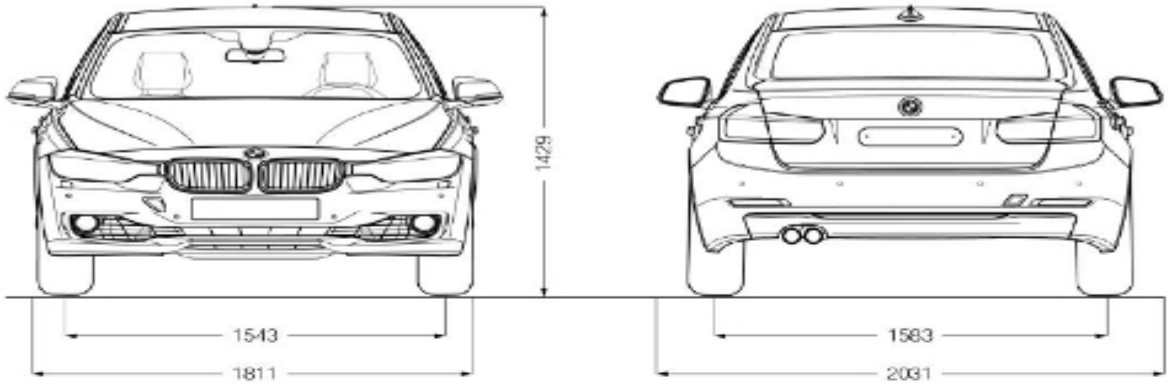
Where do we get the new ideas from?

Business of today and tomorrow

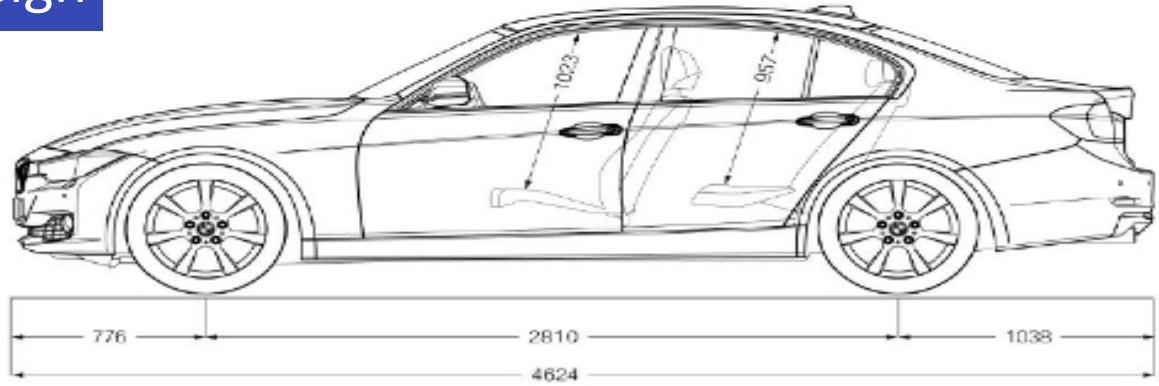
Space and the Addams Family



Evolution or die out



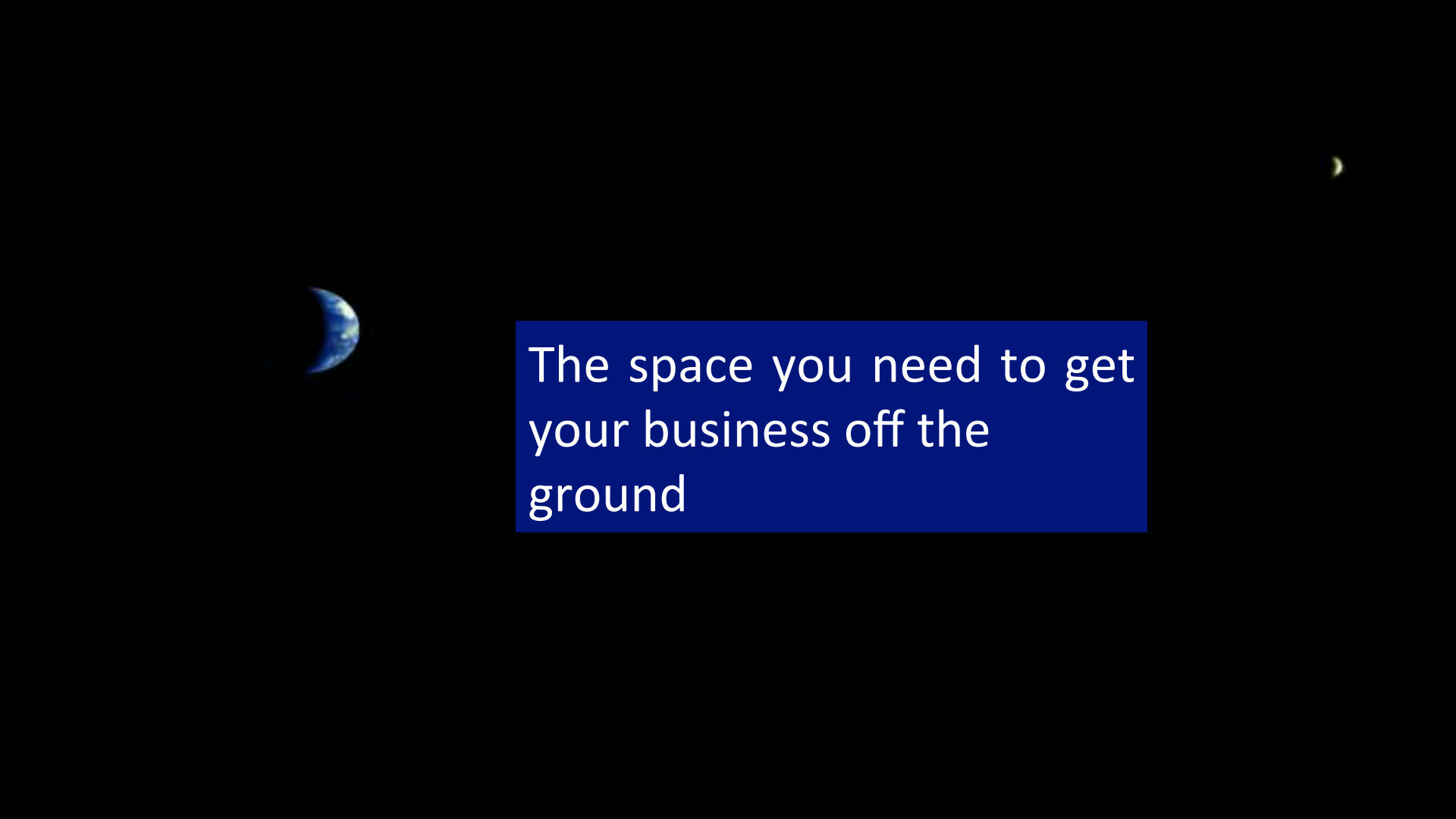
Education, Thinking, Design



UNEMPLOYEE
OF THE YEAR

The Cambrian explosion
….of start-ups

Gardener of your vineyard


The space you need to get your business off the ground

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space solutions

The space you need to get your business off the ground

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