

A Vision for the Future of EO

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#PhiWeek

Visions for the Future

Courtesy Arthur Clarke & Stanley Kubrick

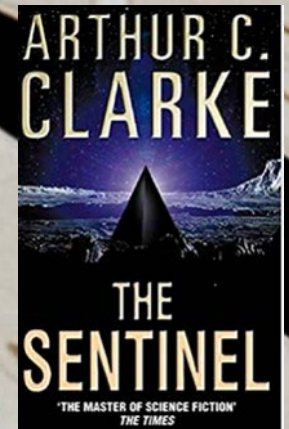


STANLEY KUBRICK'S

2001:

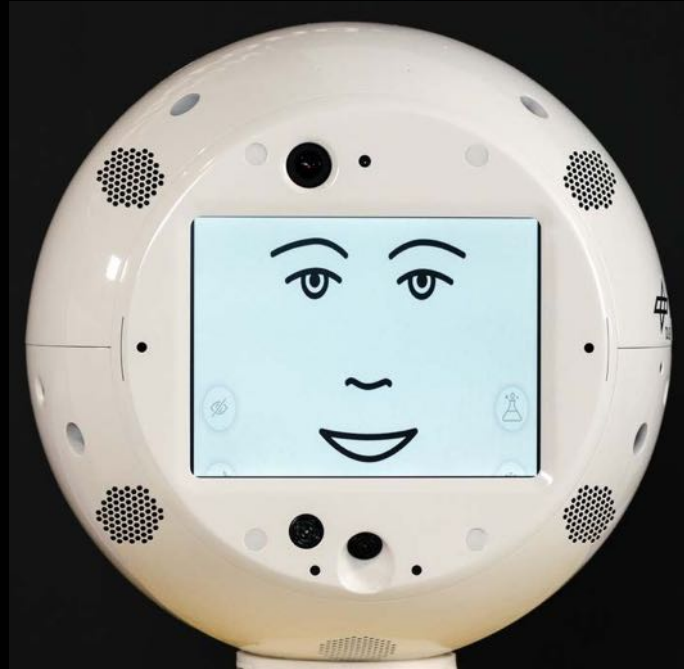
a space odyssey

Published
1951



Science Fiction 1968

HAL 9000



Today 2018

CIMON

CIMON - Crew Interactive Mobile Companion computer



Feeling the Pulse of our Planet



> 175.000

registered users
= tip of the iceberg



Land



Atmosphere



Ocean



Climate



Disaster



Security

6 operational services



150 TB satellite data
distributed per day



full, free & open
data policy

7 satellites flying

S1



S2



S3



S4



S5P



S5



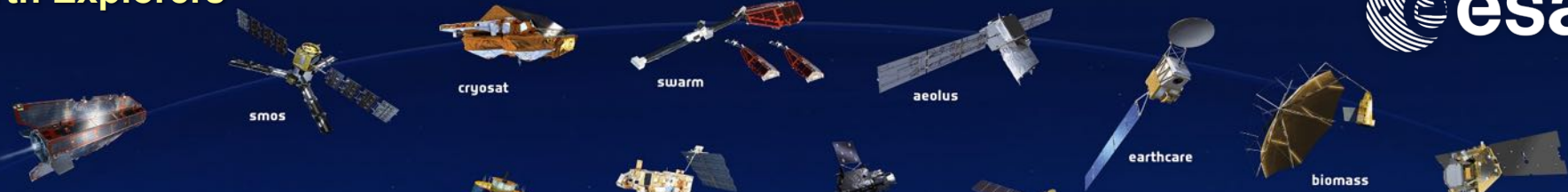
S6



preparing Copernicus 2.0

Integrating EO in a global web of inter-connected smart sensors

Earth Explorers



Meteo Sat.



Sentinels



Small Sat Constellations



HAPS



Drones



IoT

IoT

Drones

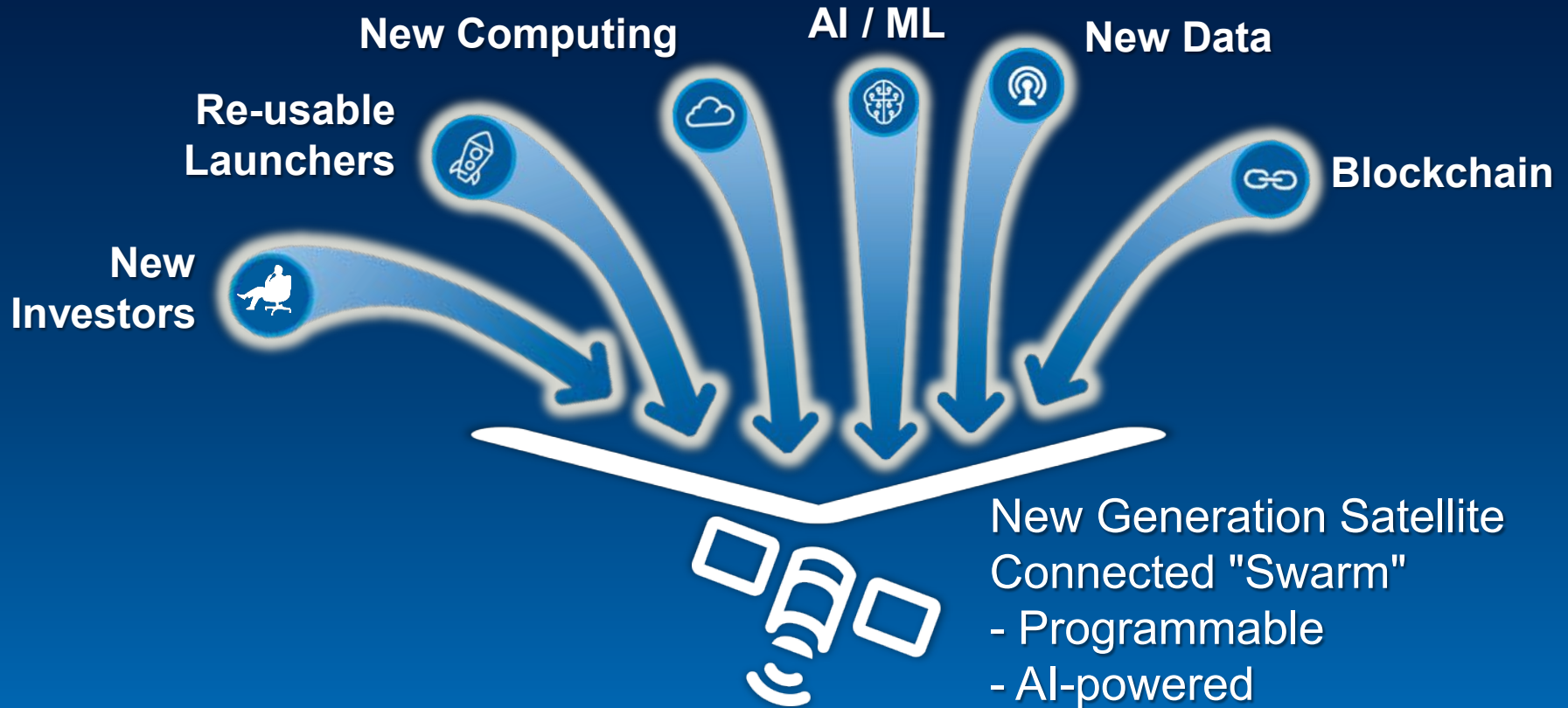
IoT



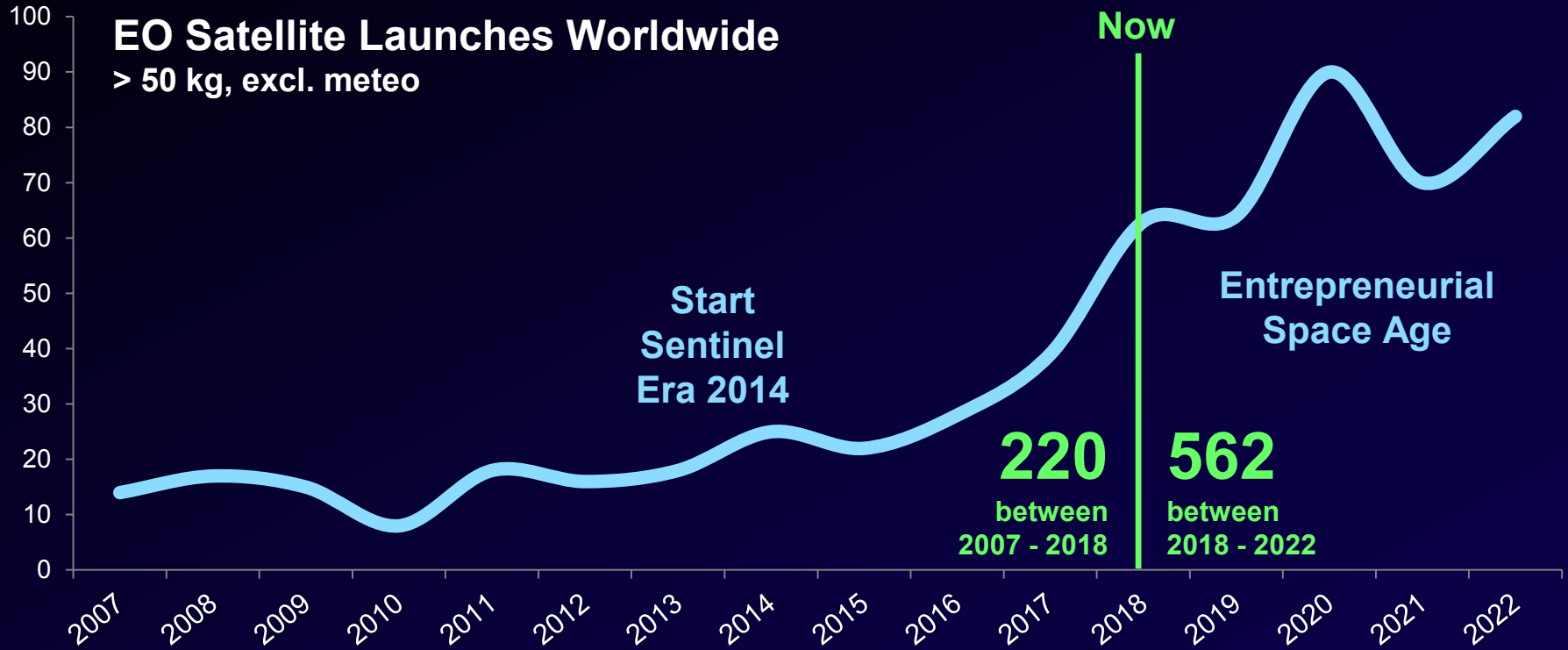
The Digital Revolution

A perfect storm of technologies
accelerating FutureEO

FutureEO is faster than you think!



More Eyes in the Sky



© Euroconsult Database, 2017



Towards real-time HD Video



Increasing use of AI for EO



Sentinel-1 as seen
by AI deepart.io

AI Renaissance

- Gaming (Chess, Jeopardy, GO)
- New fields: painting, music, driving
- Classification capabilities (ImageNet)
- Enables automatic data fusion at global scale



Trend of Miniturisation

Mainframe



1997

Pocket



2007

Edge



Jetson Xavier
(NVIDIA)
Tera FLOPS



Myriad, Movidius
(Intel)

2018

Ultimate Edge

Space



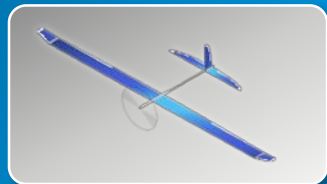
FutureEO – bringing EO into the 21st Century



Hardware



Big & Small



HAPS

Operations

Increased Data Diversity & Volumes



EO AFRICA



Software

Machine Learning



Artificial Intelligence
Data Analytics
Internet of Things



Cloud Computing

21st Century EO



Earth Explorers

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Sentinels

Small Sat Constellations

HAPS

Drones

HAPS

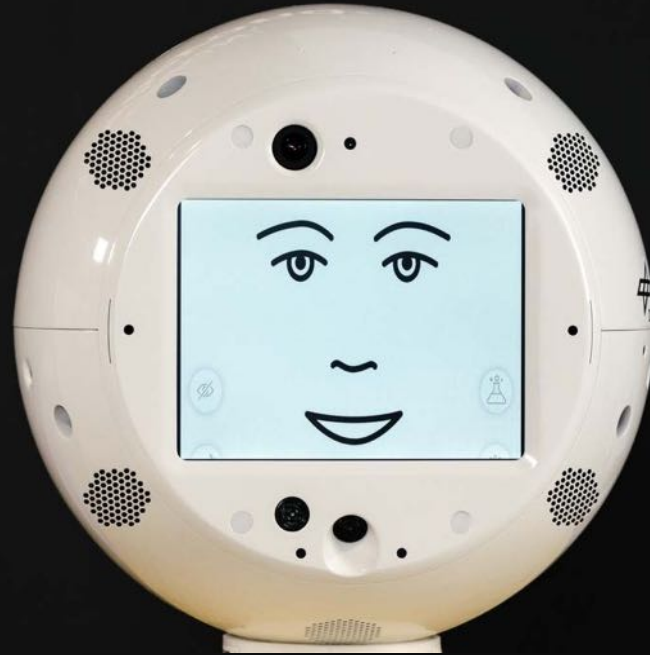
Drones

IoT

IoT

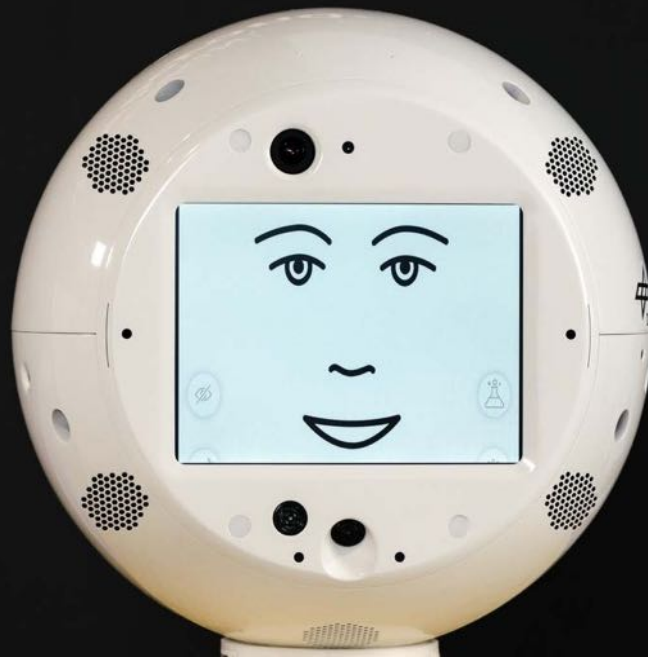
IoT

Future Visions at Phi Week



CIMON
Digital Assistant on ISS





CIMON
Digital Assistant on ISS

Best wishes for inspiring Phi week

