Evolving Dimensions of Geospatial Technologies

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THE WORLD IS ALWAYS CHANGING


Change

We can See

We can Touch

We can Smell

We can Taste

We can hear

We can Combine

We can React, Interpret and Continue with Changes

Change Is Everywhere and Dynamic

- Change is caused by
  - Human beings acting
  - Politicians
  - Legal
  - Mother earth
  - Technology influence
  - Environmental impacts
  - Economy


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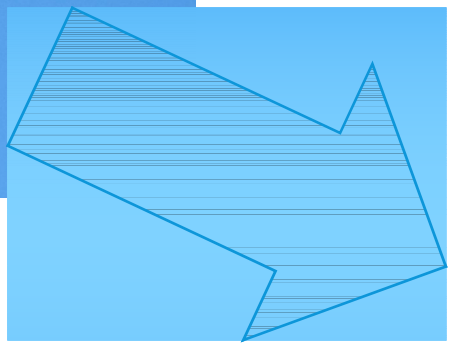
… by Human Being

Example of Human Being

We can Cover and Store the Changes

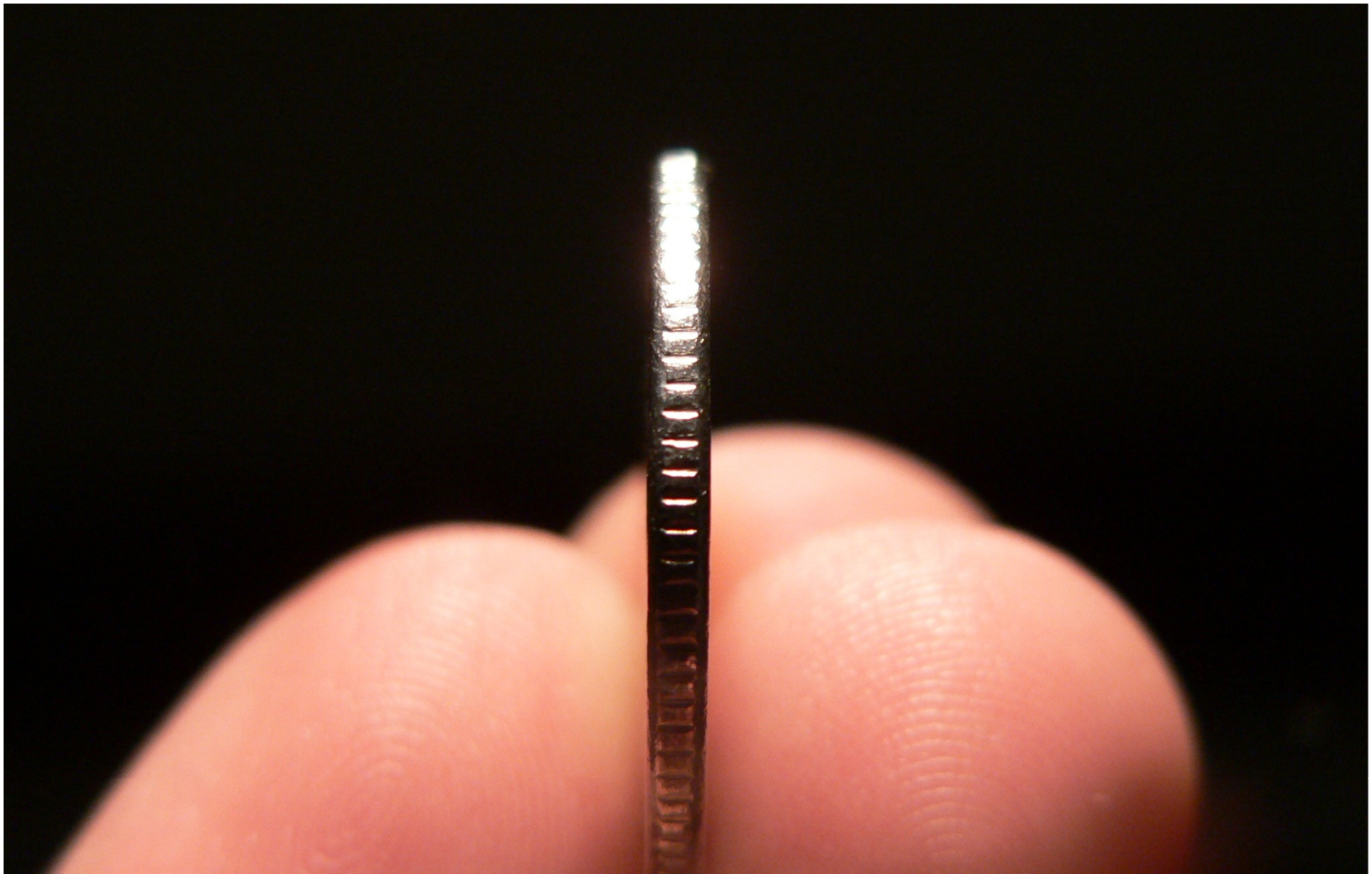


We Collaborate – We ACT!

What are the Challenges?

INTERGRAPH


BIG
DATA
USE
ONE
SINCE
SOFTWARE
USING
TYPES
WORKING
GARTNER
MASSIVELY
BIOLOGICAL
HUNDREDS
RELATED
ALSO
PERFORMANCE
CREATED
DISK
RELATIONAL
DESKTOP
TENS
CAPACITY
FC
FORMS
PRESENTATIONS
WORLD'S
PRACTITIONERS
NOW
ORGANIZATIONS
REQUIRING
BUSINESS
MOVING
ANALYTICS
UBIQUITOUS
SAN
RADIO-FREQUENCY
COMPLEXITY
SOLID
WIRELESS
TOLERABLE
PARALLEL
SIZE
NEEDED
QUALITIES
BURIED
PETABYTES
PROCESSING
LOGS
INTERNET
TECHNOLOGIES
USED
DISTRIBUTED
CAPTURE
MAY
MANAGEMENT
MANAGE
GROW
SOCIAL
LARGE
STORE
DEFINING
CASE
EVERY
LARGER
STORAGE
RESEARCH
DATABASES
MPP
TERABYTES
COST
CONTINUES
CITATION
COMPLEX
INDEXING
DIFFICULTY
TARGET
ABILITY
SETS
EXAMPLES
APPLIED
AMOUNT
DESCRIBING
ELAPSED
CURRENT
THOUGHT
SENSOR
ARCHIVES
CONNECTOMICS
RECORDS
INFORMATION
RECONSIDER
OPPORTUNITIES
SEARCH
BIOGEOCHEMICAL
NETWORKS
DEFINITION
INCLUDE
SYSTEMS
WITHIN
PROCESS
COMBAT
SIGNIFICANT
TIME
SHARED
ZETTABYTES
COMPUTING
TOOLS
SET
GENOMICS



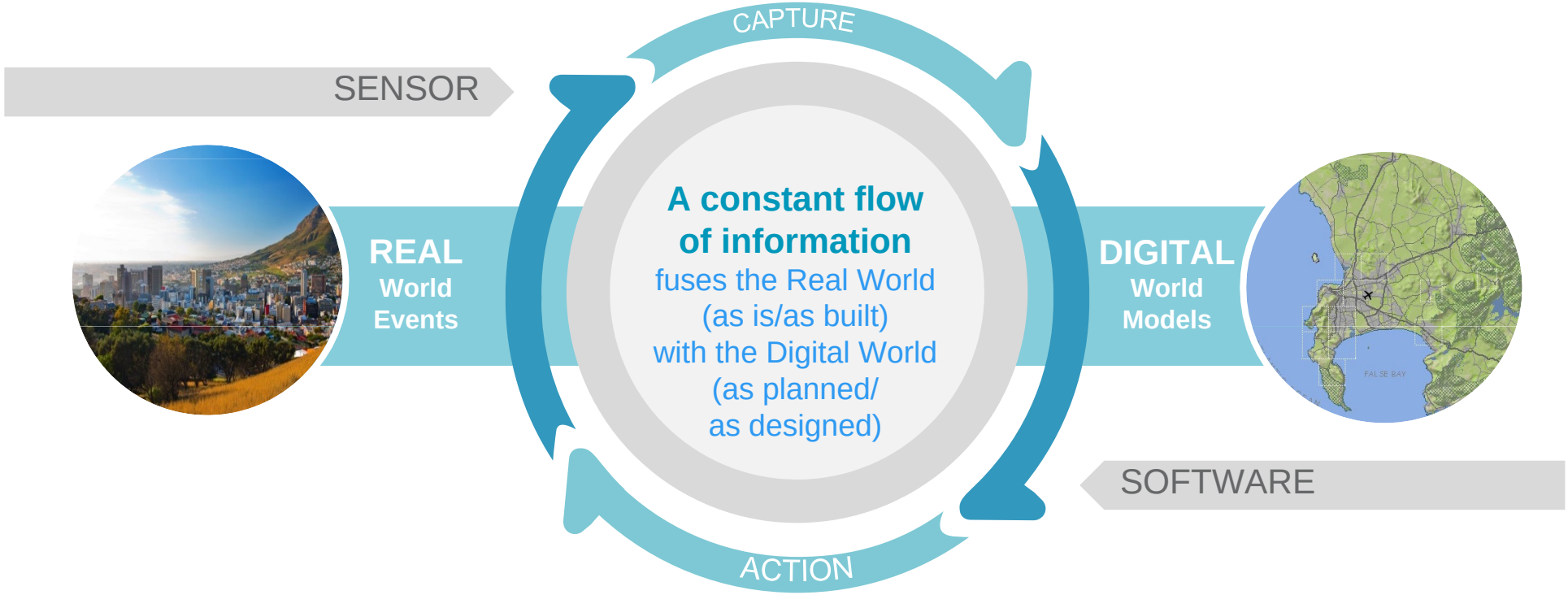
Unstructured Data need Structure

Workflows Need to be Built

Closing the Gap Between Our Real and Digital Worlds

Dynamically Changing World

Fusing the Real and Digital Worlds



Vision: To Empower a Billion People

Fusion of Geospatial Genres

Surveying →
Photogrammetry →
Remote Sensing →
GIS →

Data

Dynamic Geospatial Engine

Mobile Apps

Dynamic Interactiv e Maps

5D Digital Worlds

Web Services & Applications

Reports & Presentations

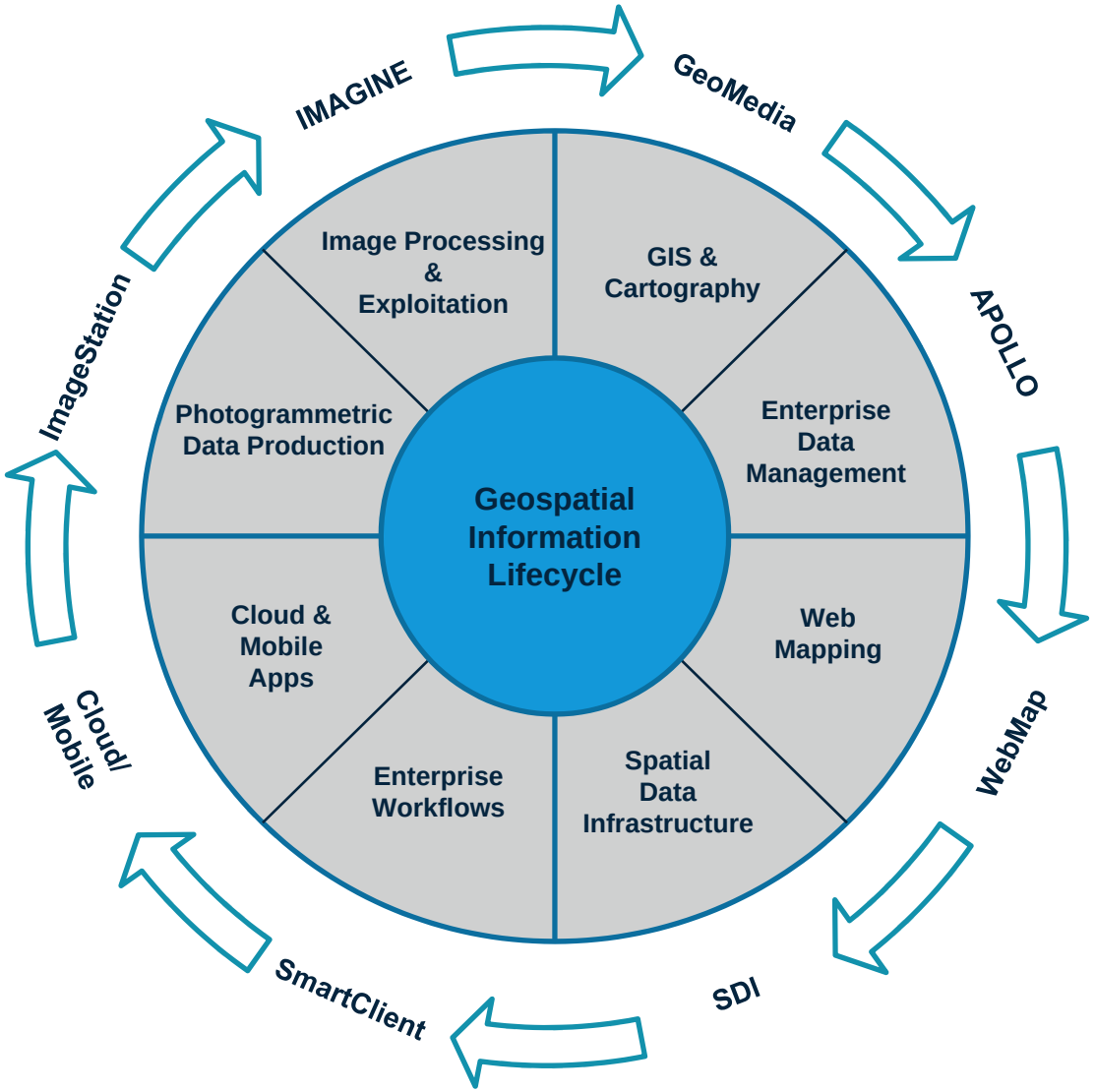
CAPTURE+ PROCESS + SHARE + DELIVER

Use Together to Build Solutions

High Complexity = Empowering a Few

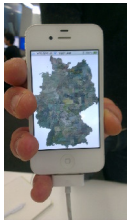
Simplicity = Empowering a Billion

Dynamically Changing Earth
From the Sensor to Information



Evolving Dimensions

- Address Big Data Challenge
- Streamline Analytics
- Get Mobile
- Do it on the Cloud

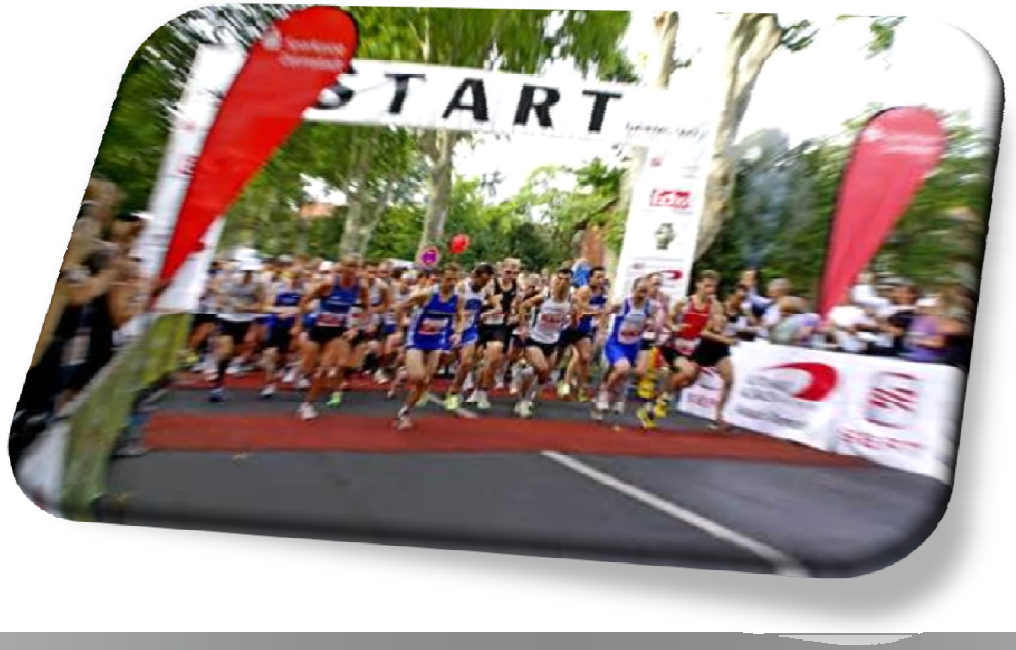


Example:

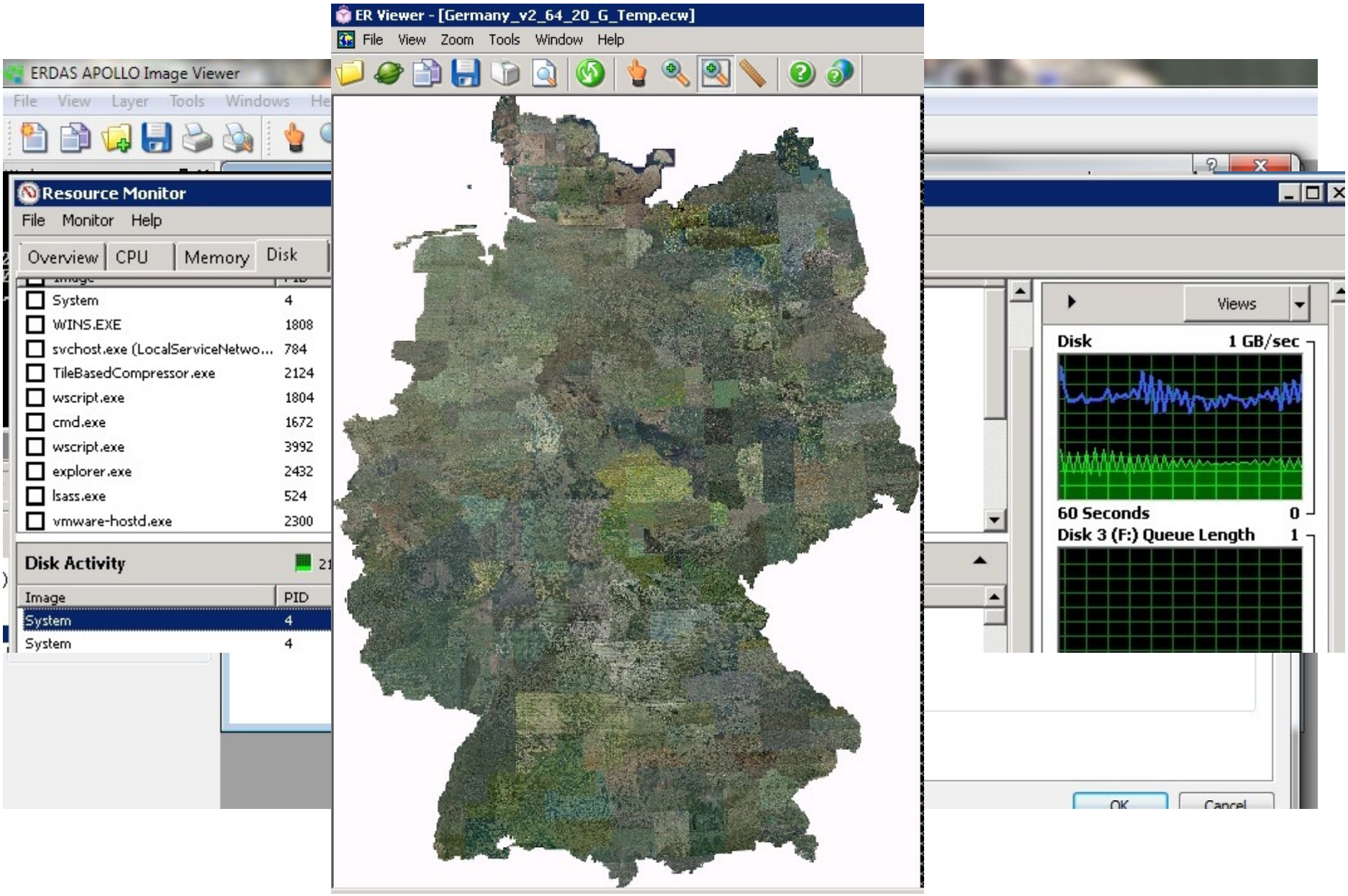
Germany at once

Where did we start from?

- Area: 365,000 km²
- Material:
  - Areal Photo: 20 cm ground resolution
  - # of files: 370.000
  - Data volume uncompressed: 38 TB



Processed



- Area: 365,000 km²
- Material:
  - Areal Photo: 20 cm ground resolution
  - # of files: 370.000
  - Data volume uncompressed: 38 TI
- **# of files: 1**
  - **Data volume compressed: 1 TB**
  - **Resolution: 3.210.000x4.340.00x3 bands**
    - Equals a 14 Terra Pixel Picture
      - ... AND 1,4 MILLIONEN PICTURES OF A 10MB CAMERA

Resultierende Datensätze im ECW-Format

68 GB
DTK25

1 TB Luftbild

44 GB
DTK25

26 GB
DTK50

8 GB
DTK100

1,3 GB
DTK20
0

76 MB
DTK100
0

253
MB
DTK50
0

Live-Vorführung

www.keine-lust-auf-kacheln.de

Cost Benefits to Hosting Services

Speichergebühren

Region: EU (Irland)

	Standardspeicher	Reduced Redundancy Storage
Erste 1 TB pro Monat	$0,095 pro GB	$0,076 pro GB
Nächste 49 TB pro Monat	$0,080 pro GB	$0,064 pro GB
Nächste 450 TB pro Monat	$0,070 pro GB	$0,056 pro GB
Nächste 500 TB pro Monat	$0,065 pro GB	$0,052 pro GB
Nächste 4.000 TB pro Monat	$0,060 pro GB	$0,048 pro GB
Über 5.000 TB pro Monat	$0,055 pro GB	$0,037 pro GB

http://aws.amazon.com/de/s3/pricing/

- Cost based on data volume: 76 TB
- No Access and Datadownload charges included

US$	Per Month	Per Year
1 TB	171	2.052
49 TB	7.065	84.672
26 TB	3.276	39.312
76 TB	**10.503**	**10.503**

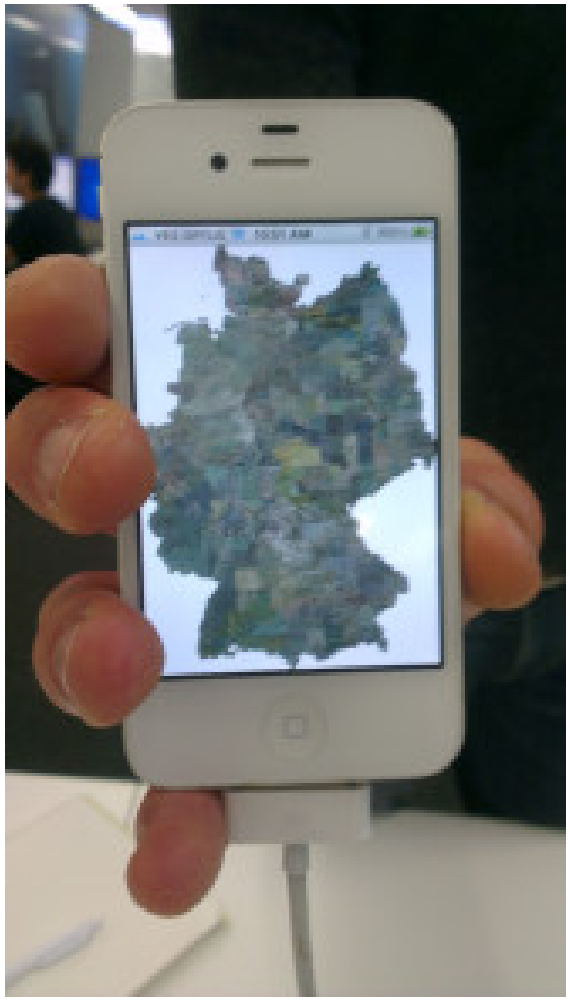
!

- Most probably the LARGEST ECW File ever

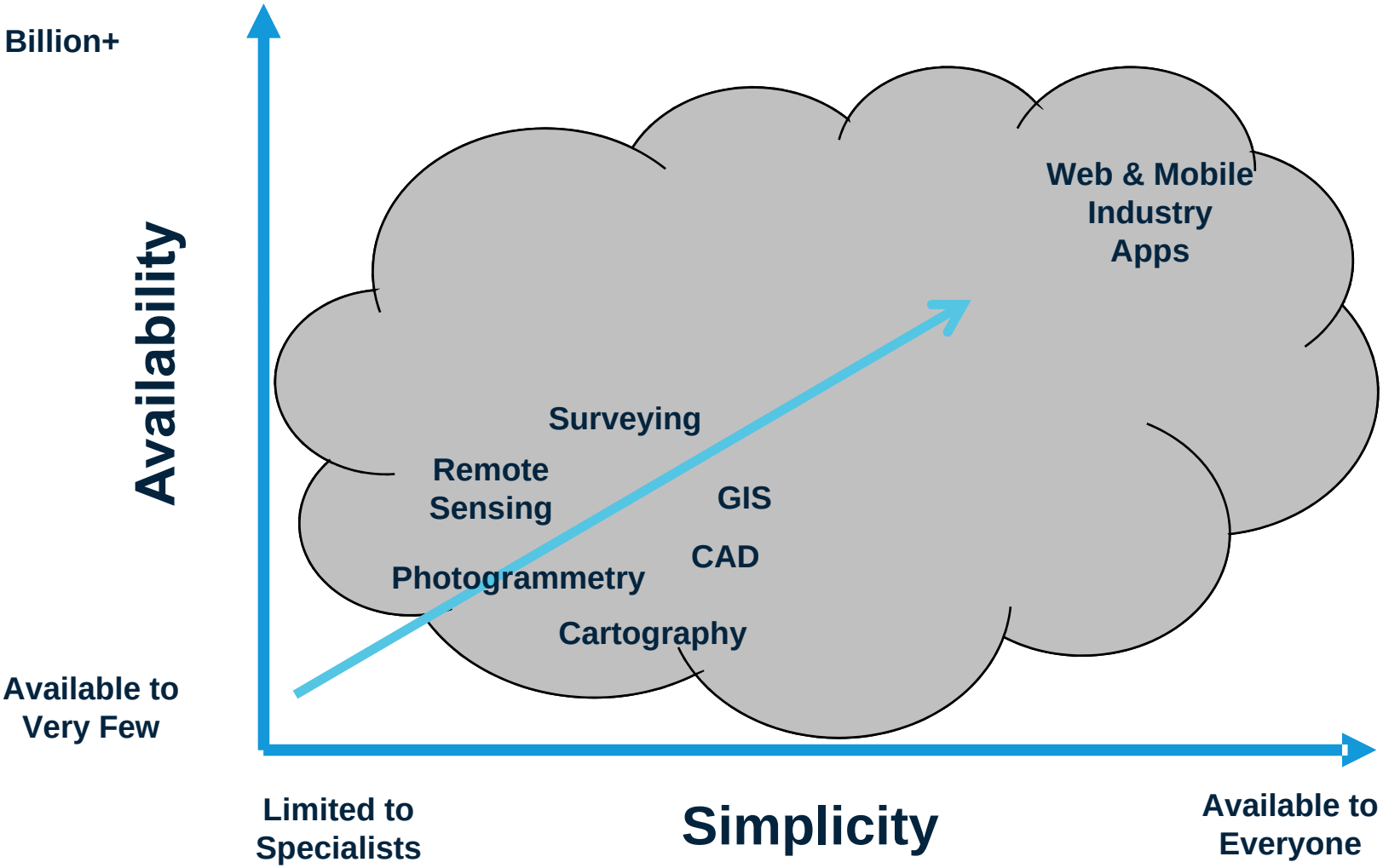
- Best Performance by using Apollo
  - ECWP
  - WMS
  - WMTS

- Future:
  - Parallel ECW Compression to support fast Cloud process

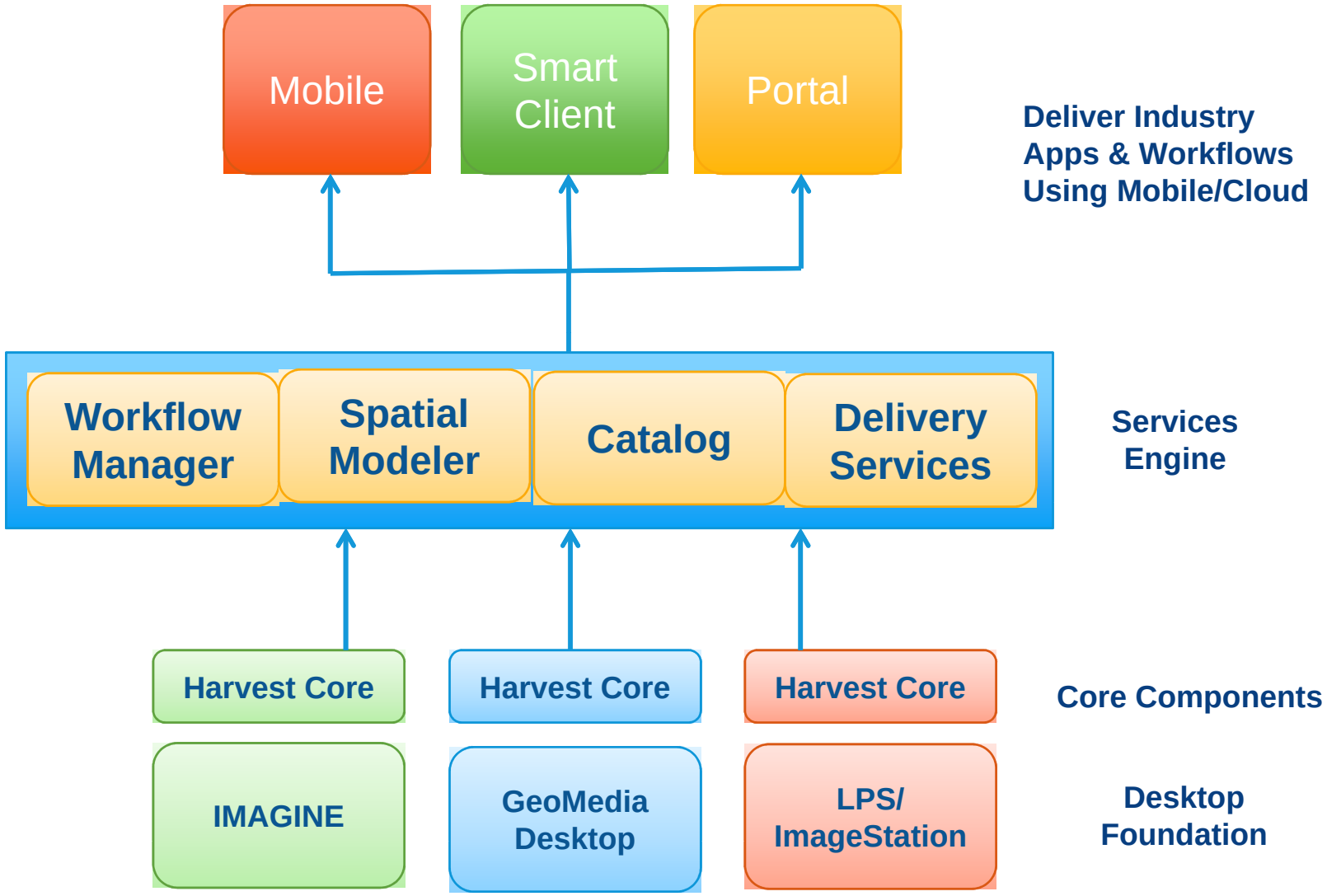
- Facts for data providers
  - Mobile ECW SDK
  - Android, iOS und Win 8 Support
  - Streaming support for 14 Tera Pixel ECW



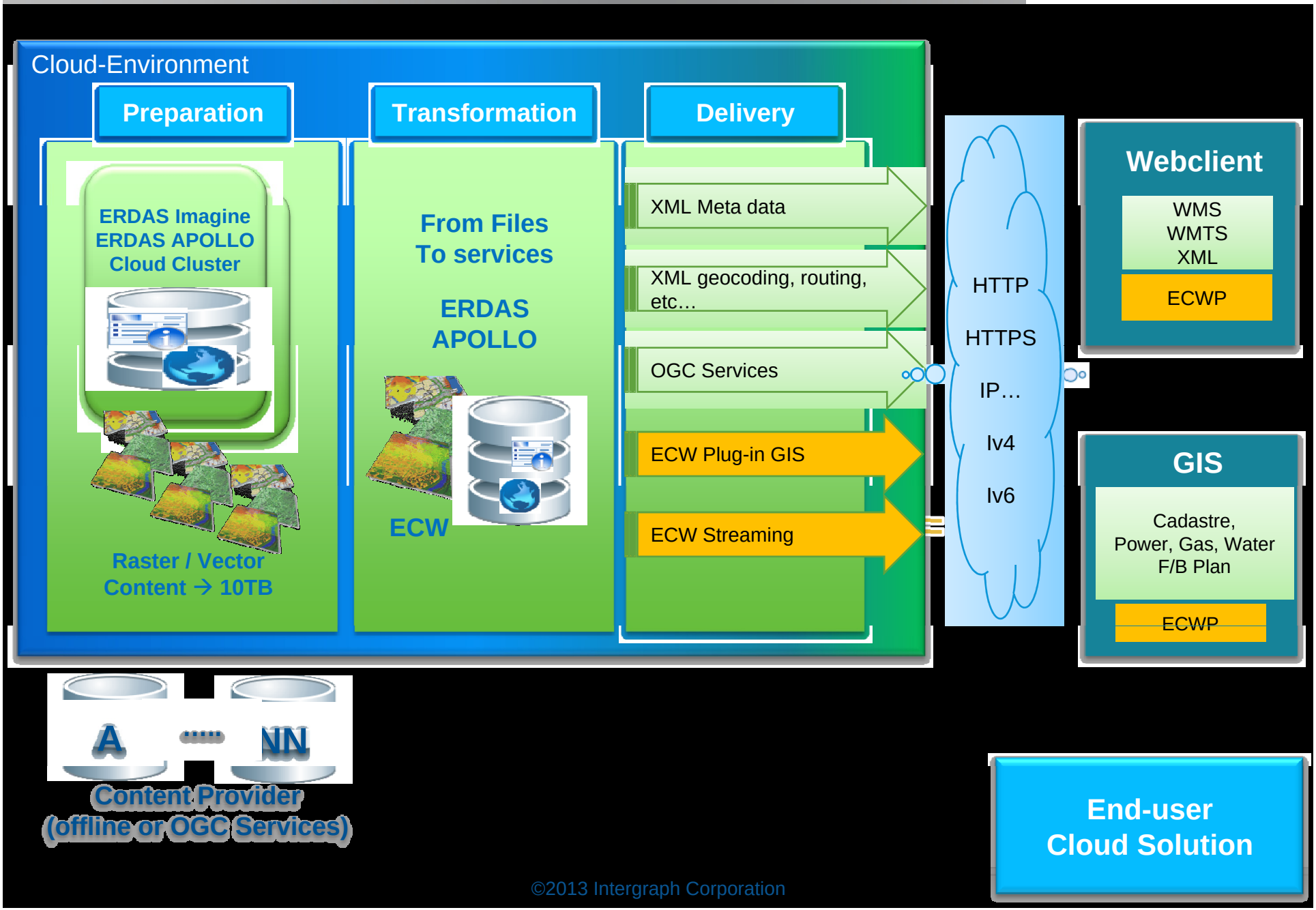
New Apps for a New Generation



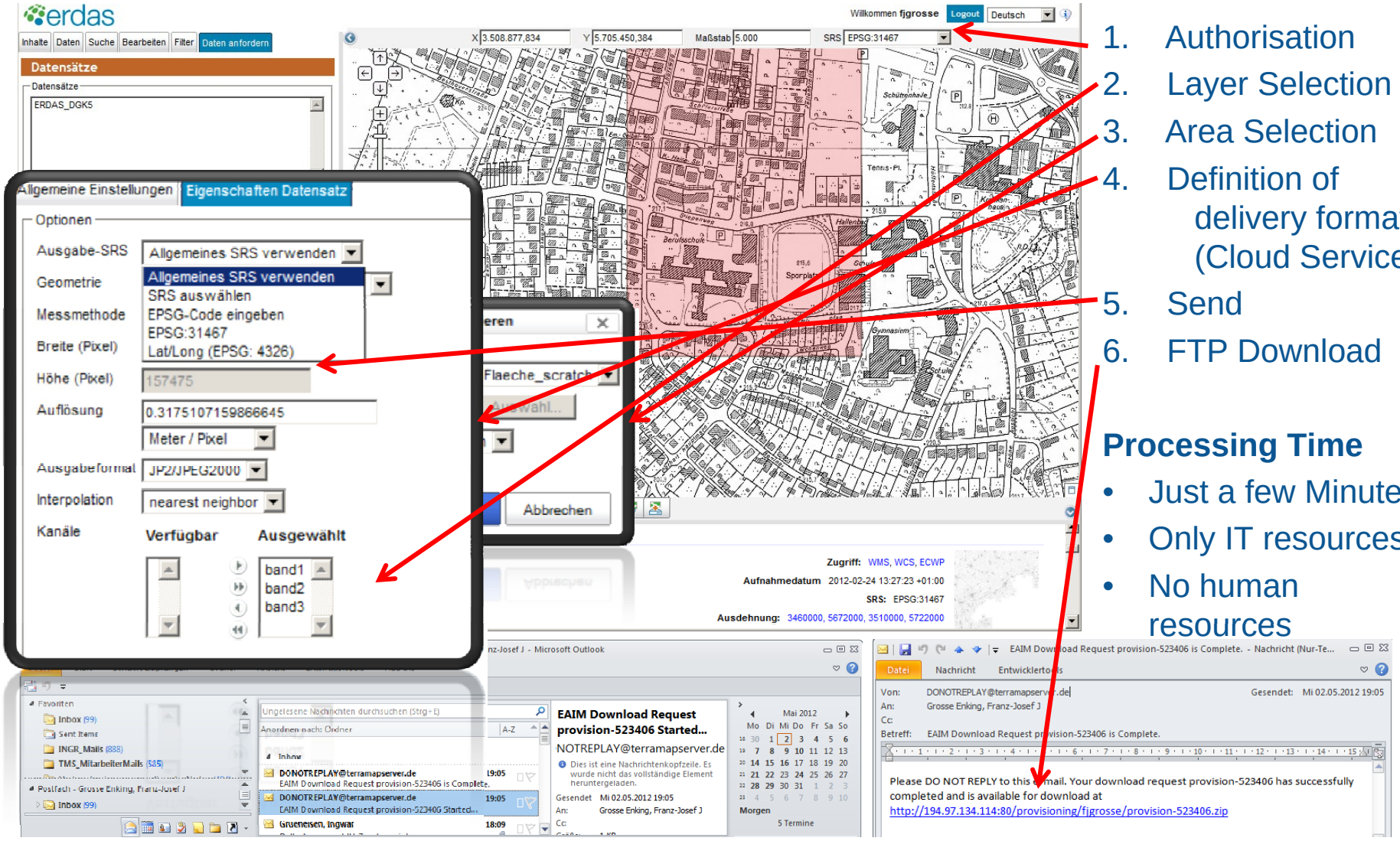
Cloud Services Engine



Cloud Solution



ERDAS Apollo Client: Clip–Zip–Ship



1. Authorisation
2. Layer Selection
3. Area Selection
4. Definition of delivery format (Cloud Service)
5. Send
6. FTP Download

Processing Time

- Just a few Minutes
- Only IT resources
- No human resources

(Software + Content) * Cloud Infrastructure = Industry Apps

APOLLO

GeoMedia

IMAGINE

SmartClient

...

Software

Sensors

Data Providers

...

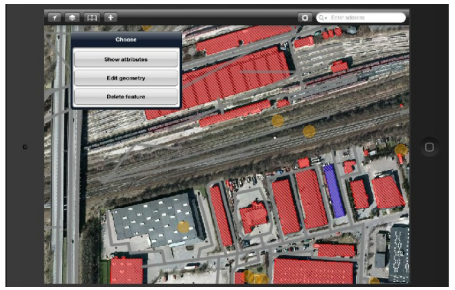
Content

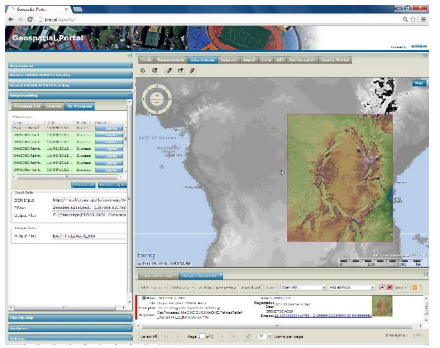
Cloud Multi-Tenant Platform

- UI
- Map Engine
- API
- Cloud Storage

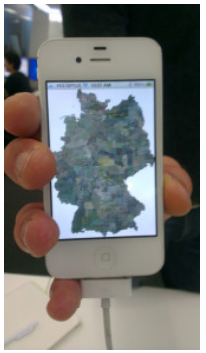
Apps

Information





- **Sensoring, Analytics, Mobile is stongly related to Geospatial**
- **Address Big Data Challenge**
  - Sensors cover different kind of data 24/7
  - Generating Mass Data
  - Fusion of all kind of data generated by senso covering the changes
- **Streamline Analytics**
  - Challenge of Analysing all kind of data in distributed locations
  - Get them neutralized for everybody
- **Get Mobile**
  - Generating APPs serving the needs of the users
- **Do it in the Cloud!**



Questions?