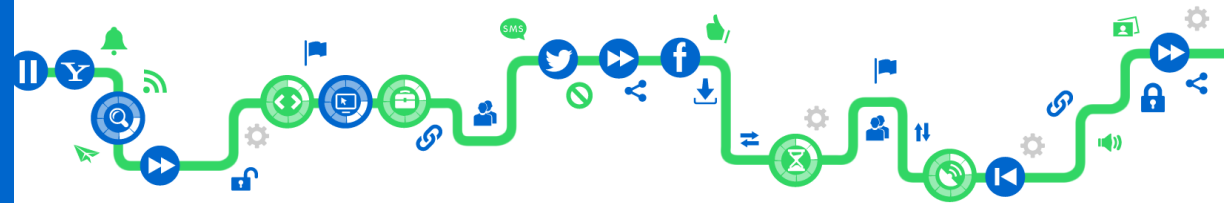


Bartlett Consulting and integration

# BCi digital Broadcast and IT Specialists



General Presentation – April 2015

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# Main Areas of Operation (Broadcast and IT)

- Contract Engineering Resources
  - Architectural Design and Systems Integration
  - System Test (verification and acceptance)
  - Project Management
- Bespoke Solutions Development
  - User interfaces / Web applications / Storage and Hosting
- Specific Products
  - Data Analytics/ Media Workflow / Transcoding
- Complete Site Equipment Installation / Management
- Training
  - Detailed technical systems course undertaken at client sites

# About us

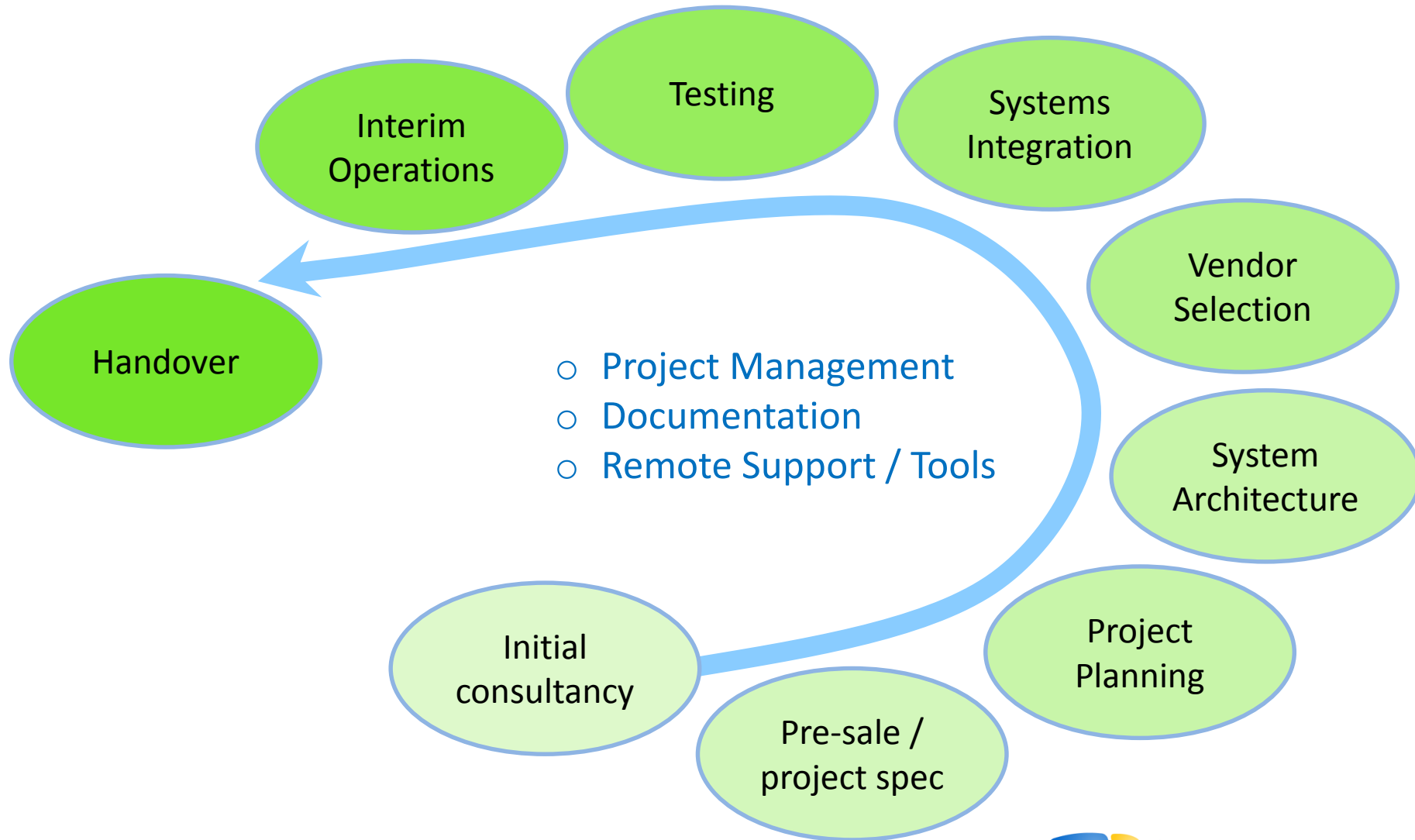
- Founded in 1997 by John Bartlett
  - 100% privately owned
- Company Organization
  - Functions
    - Leadership / Operations / Marketing / Project management / Architects / Systems integration / Product development / Test and Technical staff
  - Staff
    - 15 full time staff
    - A diverse pool of associate resources with expert knowledge and skills who are constantly called upon
- Markets
  - Media and related IT Markets

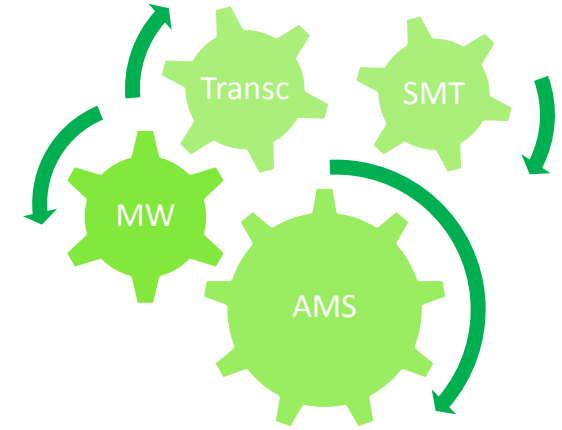
# Our Clients



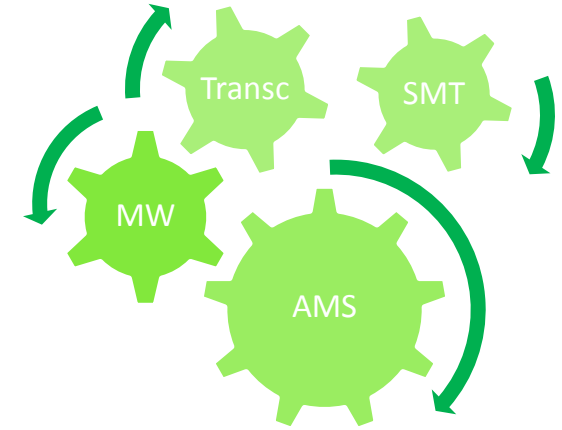
# Project Development Cycle

## Development Process – BCI can manage all or parts of the process





- BCI Products / Developments
  - SMT (SI Management and Test Tools)
  - On Demand TV test Suite (ODTS)
  - Data Analytics (Media Weasel)
  - Media Workflow (AMSWare)
  - Transcoder (Chameleon)



- **BCi Products / Developments**
  - SMT (SI Management and Test Tools)
  - On Demand TV test Suite (ODTS)
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## SMT– Test Methodology

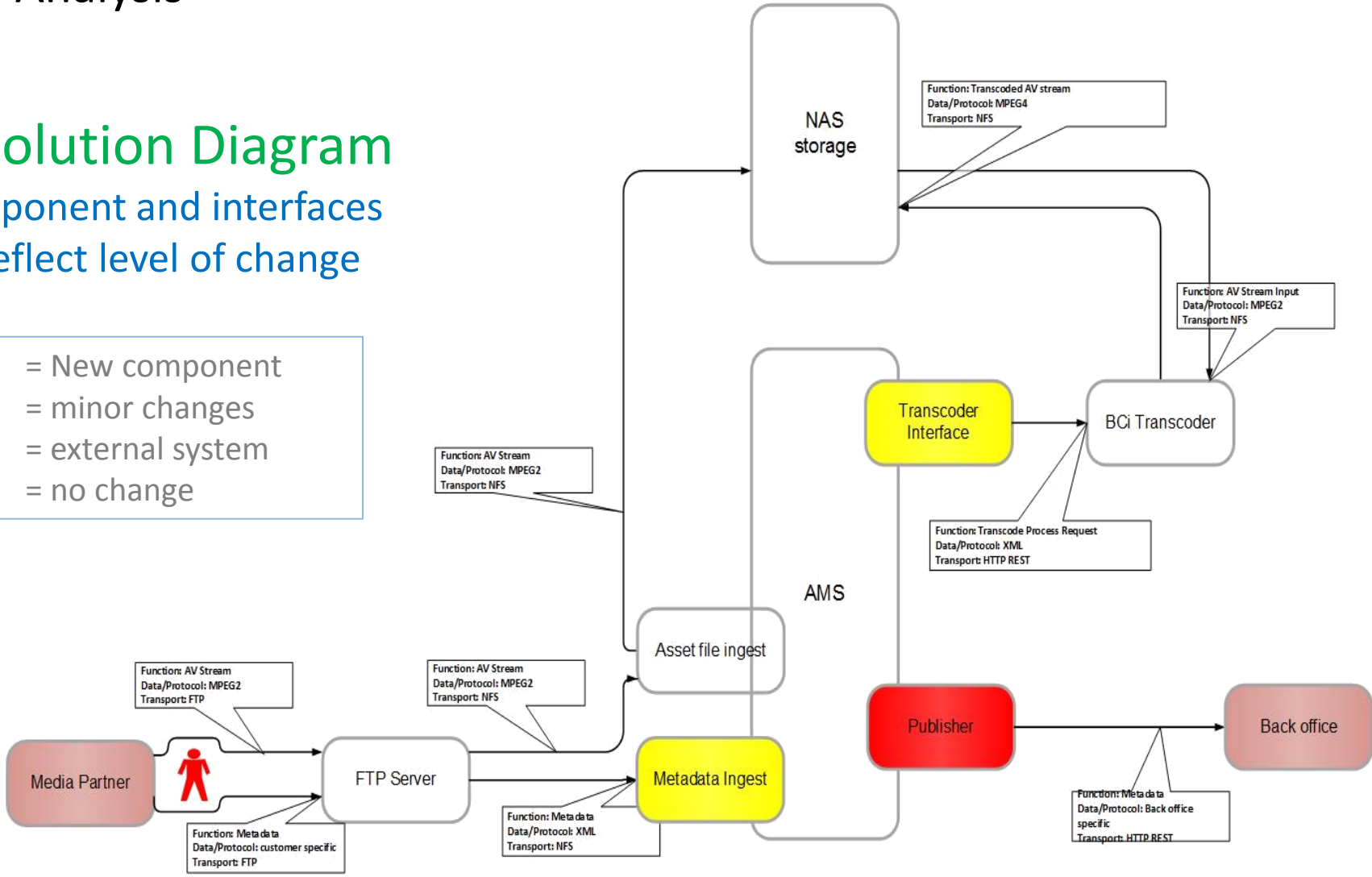
- **Analysis of the Solution**
  - Breaking down into individual core components
  - Interface analysis
  - Data Flow analysis
  - Test Coverage and Verification
  - Functional and non-functional test cases
  - Environmental Analysis (Ensuring required packages for testing are available such as custom data)



## SMT– Interface Analysis

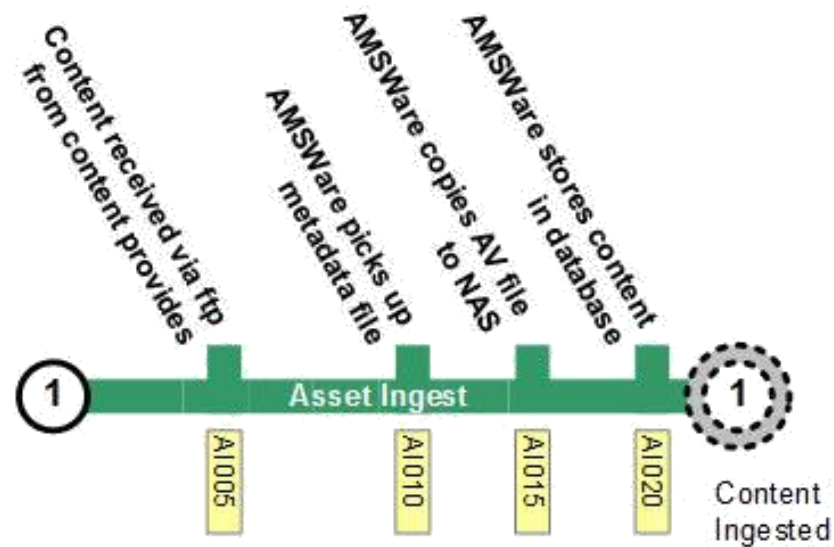
- Detailed Solution Diagram
  - Each component and interfaces
  - Colours reflect level of change

Red	= New component
Yellow	= minor changes
Grey	= external system
White	= no change



## SMT– Data Flows (Tube Maps)

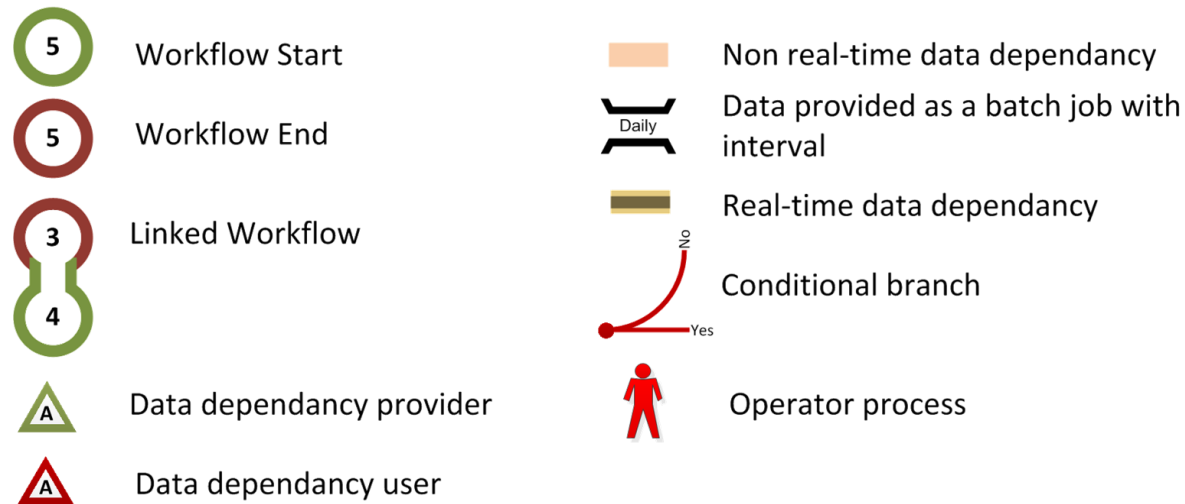
- Flows look like tube maps
  - Semi automated Tube Maps produced to fully understand the system under test
  - ‘Stations’ are reference points in the test process
  - Ensures exact flows are understood and described



*Simplified 'Tube Map'*

## SMT– Data Flows (Tube Maps)

- End to End data flows
  - Work flow key
  - Complex workflows result from the analysis



*Linked workflows and dependencies and branches*

## SMT– Test Coverage

- Automated Test Case Generation
  - Given the data flows we need to ensure test coverage
  - Broken down into 3 parts
    - Happy path
    - Fail path
    - Non functional tests

Each data flow has a number of happy, non functional and failure tests

X axis = Tube stations  
Y axis = Test cases

AMSWare - End to End Testing		w / Stations Matrix			
End to End Test Ref		A1005 - content receive	A1010 - AMSWare picks	A1015 - asset copied to	A1020 - asset written to
Ingest [1]		Y	Y	Y	N
Initial Copy Ingest - Happy Path	EEHA0101	Y	X	X	X
Initial Copy Ingest Fails on Content	EENE0101	Y	X		
Initial Copy Ingest Fails on Metadata	EENE0102	Y	X		
Initial Ingest Performance	EENF0110	Y	X	X	

Test Cases

Tube map has a unique reference to ensure coverage

Missing test coverage

## SMT– Additional Documentation

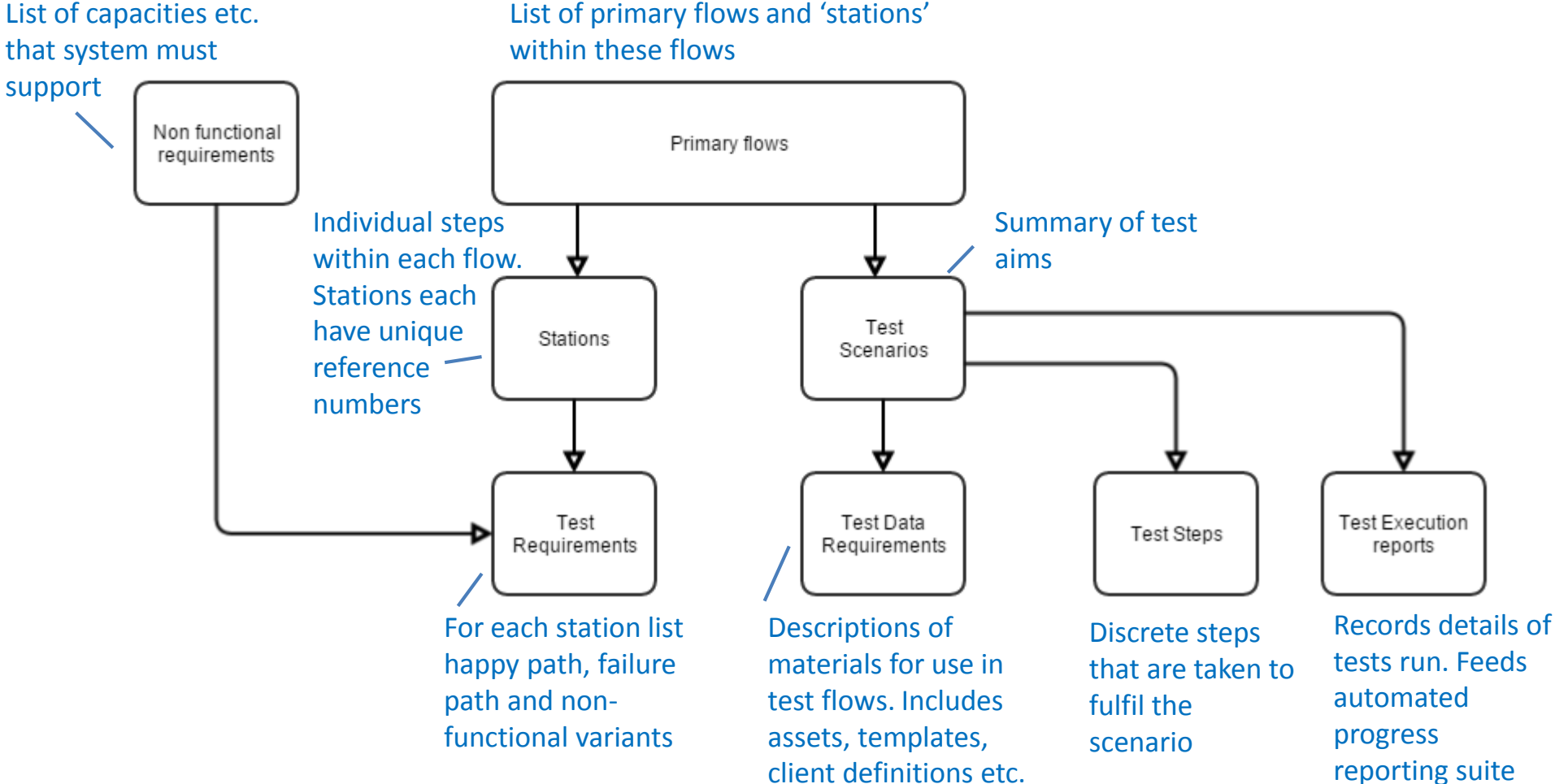
- **Test point reference**
  - A reference of each test case identified in the test coverage document
  - Does not describe the test cases
  - Identify variables required for testing – such as custom manifest or content, or specific test devices (e.g iPads)
- **Test steps**
  - Detailed description of test steps to be follows
  - Usually in a test program – e.g. TestLink, Quality Centre
    - BCI has also written in excel or word depending on customer processes
- **As run records**
  - Details versions & configuration for all components against which tests are run
- **Test Execution reports**
  - Summary of test results

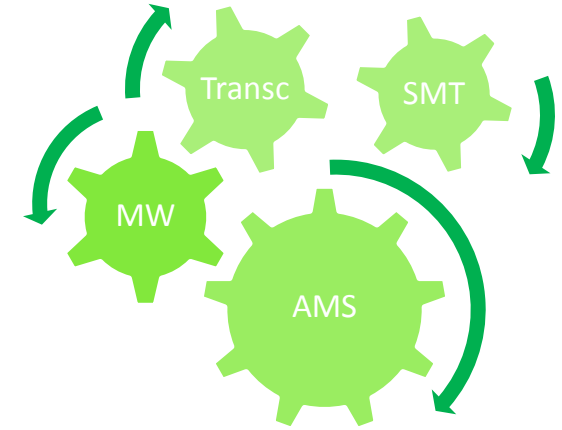


### Report To Client

- System analysis
- Test cases
- Test reports

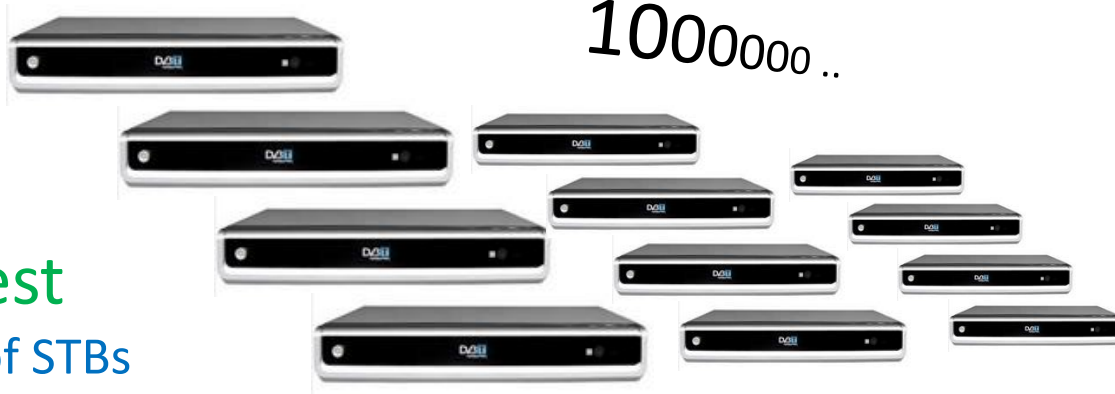
# SMT– Testing Process Summary





- **BCi Products / Developments**
  - SI Management and Test Tools (SMT)
  - On Demand TV test Suite (ODTS)
  - Data Analytics (Media Weasel)
  - Media Workflow (AMSWare)
  - Transcoder (Chameleon)

## ODTS – On-Demand Test Suite



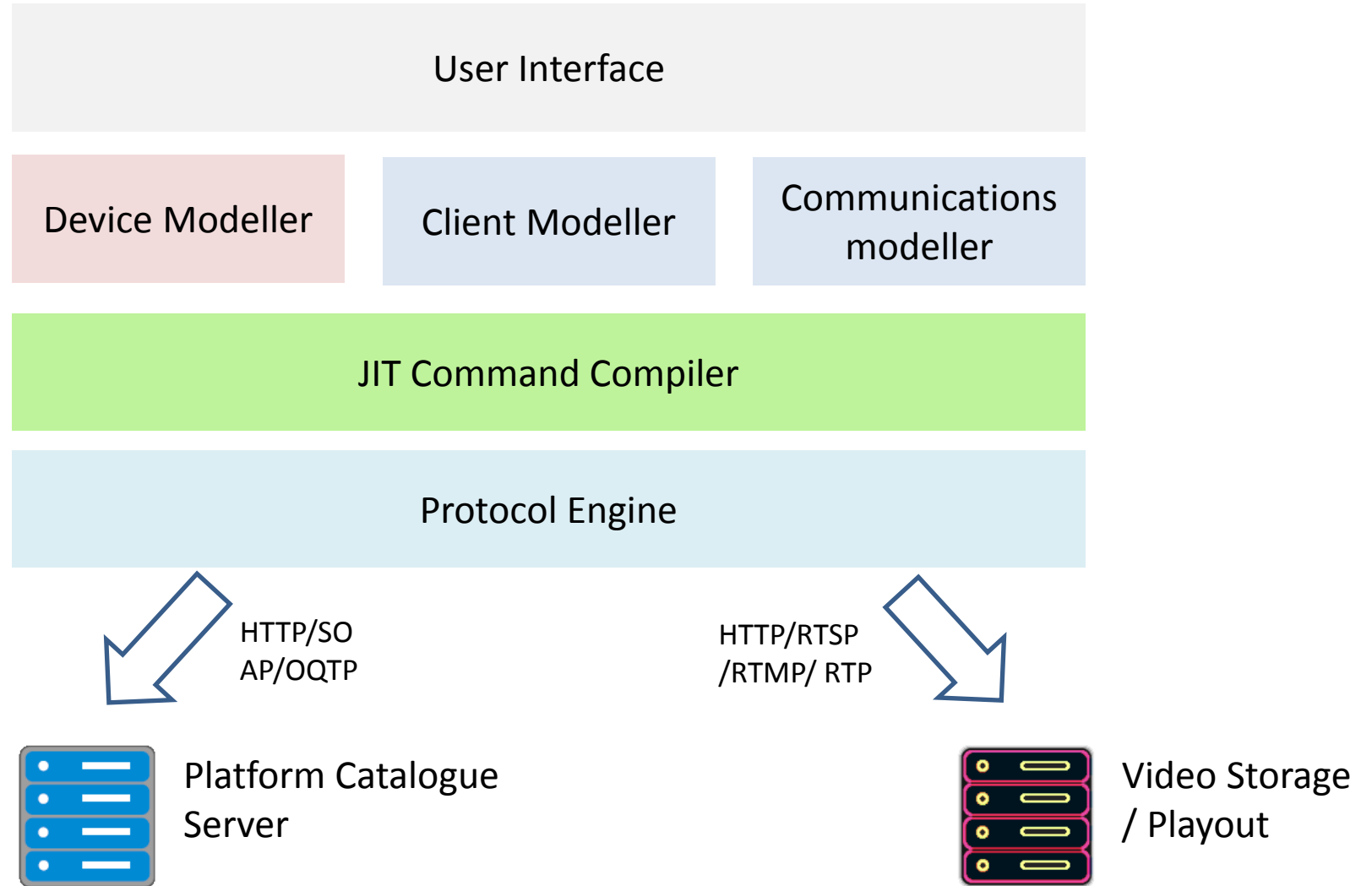
Simulates 1,000's of STBs

- **Modelling of Platform under test**

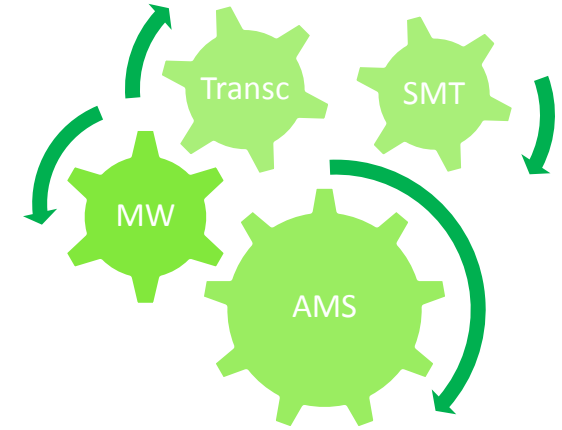
- Scalable and can simulate thousands of STBs
- Accurate logging and performance reporting
- Main Components
  - User Interface (Interaction manager)
  - Device Modeller (Models devices and protocols)
  - Client Modeller (Models STB communications)
  - Communications Modeller (Communications Protocol management)
  - JIT Command Compiler (Compiles communications commands based on platform behavior)
  - Protocol Engine (Protocol stack management)



## ODTS – Architecture

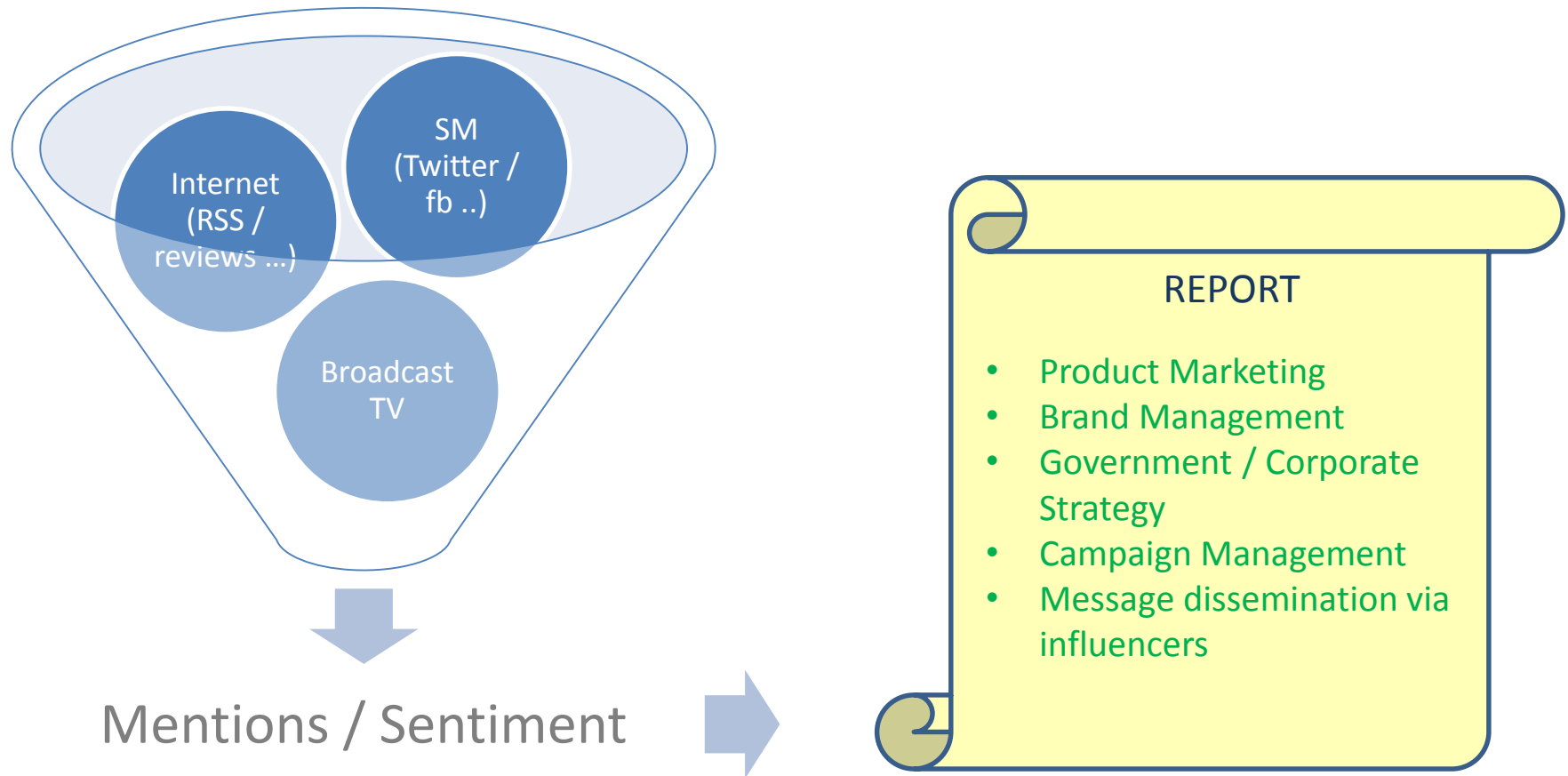


- **BCi Products / Developments**
  - SI Management and Test Tools (SMT)
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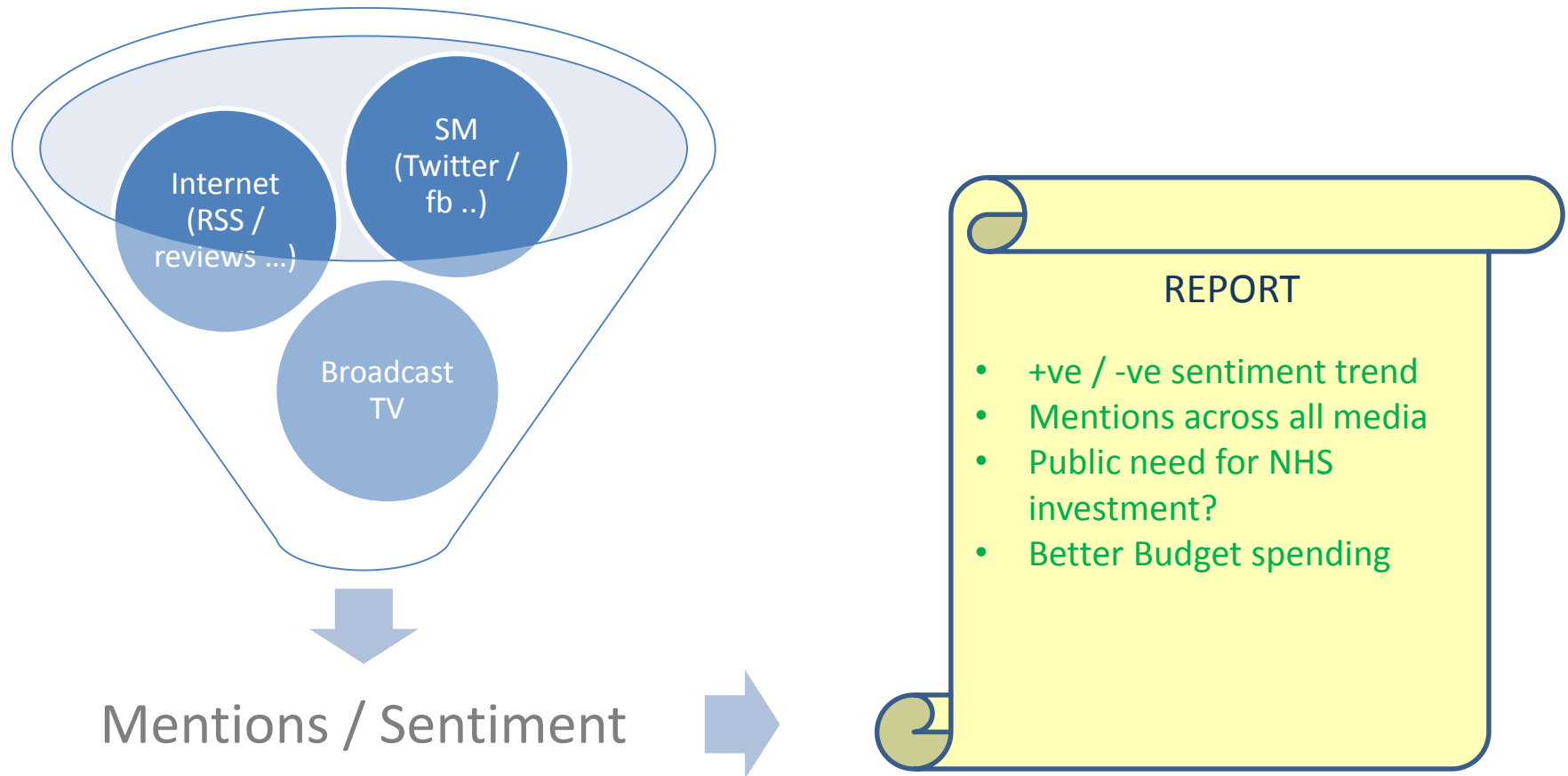
## Media Weasel – analysis of a broad range data for corporate and Government purposes

### Broad Range Data Sources



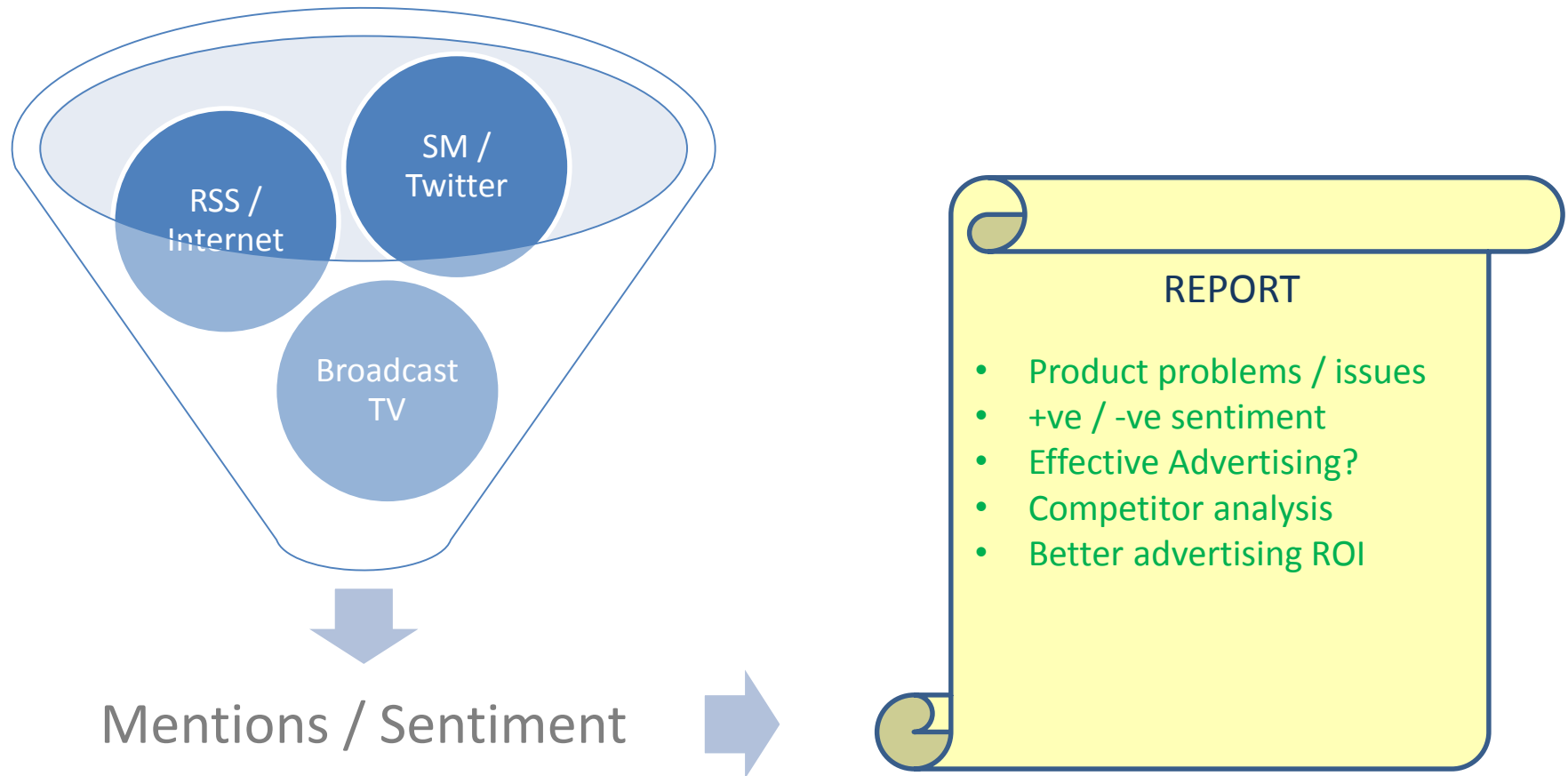
## Media Weasel – Example : Government National Health Service (Social Attitudes)

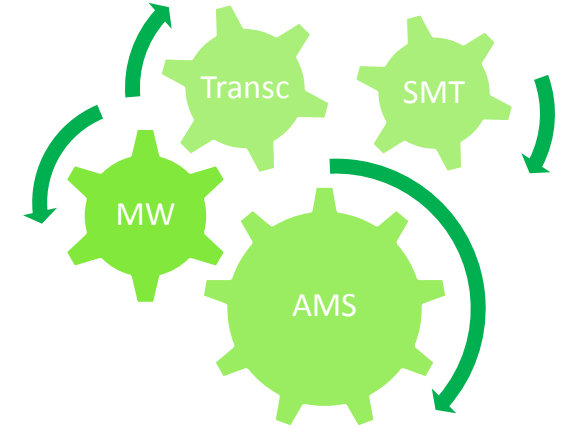
Specific Key word Mentions (blogs/ SM / RSS / TV discussions)



## Media Weasel – Example : Product Marketing

Specific Product Mentions (blogs/ SM / RSS / TV advertising)





- **BCi Products / Developments**
  - SI Risk Management and Test Tools (SMT)
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  - Data Analytics (Media Weasel)
  - Media Workflow (AMSWare)
  - Transcoder (Chameleon)

## AMSware – Asset Management System



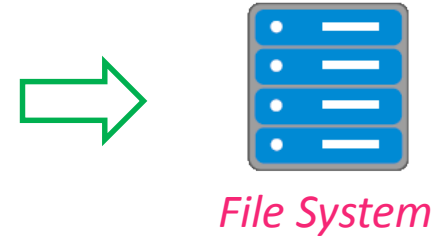
*Enterprise Service Bus  
- Heart of the message driven architecture*

- **Plug and Play building blocks**
  - Message driven architecture
  - Blocks added as required
  - Management and user interfaces
  - Transcoder
  - Easy scalability and resilience
  - Tools and schema for industry standard meta data formats
  - BCI expert support

## AMSware – Example Work-flow - 1

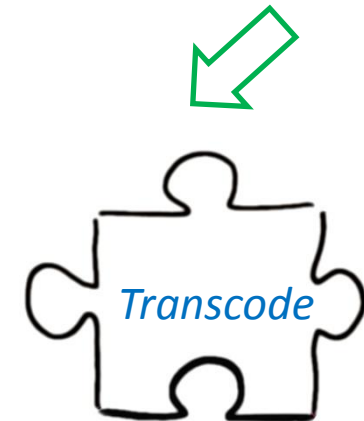


- Content Receipt
- Metadata validation (against client's spec)
- Metadata processing > AMSware format
- Video essence validation (as appropriate)
- Video essence post processing (if any)



File System

- Transcode service queuing for none queue capable devices
- Most appropriate transcoder adaptor selected
- Adaptor manages the transcode from start to finish
- Multi standard CODECs supported
- Watermarking option



Next page 

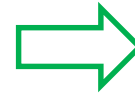


## AMSware – Example Work-flow - 2

Previous page



- Required DRM performed on essence

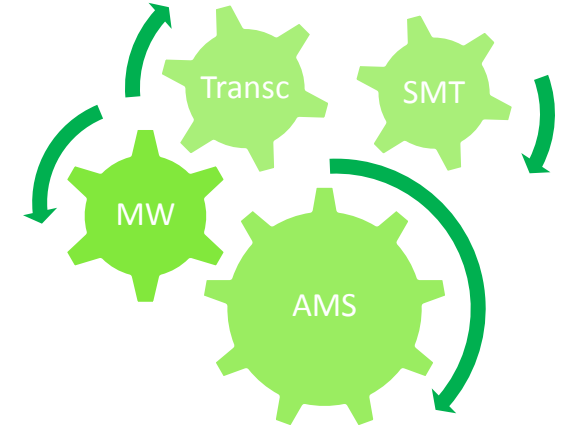


- Publish / Out to client
- Whichever protocol is required

BCi have a unique insight into the operational requirements of real production asset management Systems. Utilizing this knowledge we've built, from the ground up, our own *AMSware* solution.

The two most important points guiding our design have been the following:

- We've seen the failings of other (often very expensive) asset management systems actually in production
- Our system takes into consideration the REAL needs of our broadcast clients

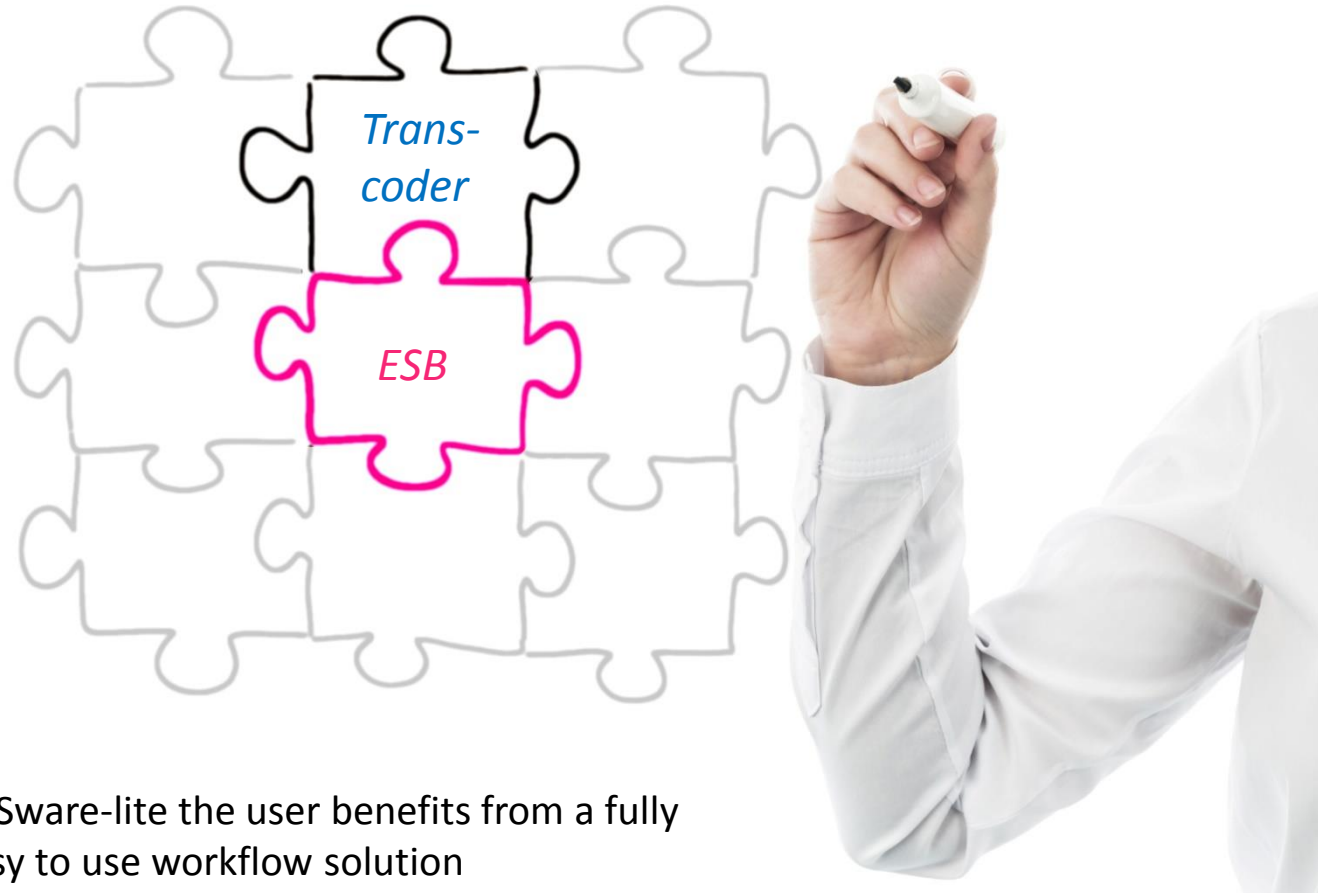


- B*Ci* Products / Developments
  - SI Management and Test Tools (SMT)
  - On Demand TV test Suite (ODTS)
  - Data Analytics (Media Weasel)
  - Media Workflow (AM*S*Ware)
  - Transcoder (Chameleon)

## Chameleon – Multi function / Parallel operation Transcoder

- Fully Managed Video / Audio Assets Transcoder
- Easy to use **stand alone** and **enterprise** solutions
  - Configuration dashboard
  - Easy to use user dashboard
- Configurable profiles
- Optional Transcoder technologies
- Realm support for dedicated resource allocation
- Multi-user sign-in with privilege management
- Job queuing
- Parallel processing
  - Simultaneous Audio / video transcoding
- Full Status monitoring
  - System health and queue status
  - Overall usage over time analysis

## Chameleon – Multi function / Parallel operation Transcoder

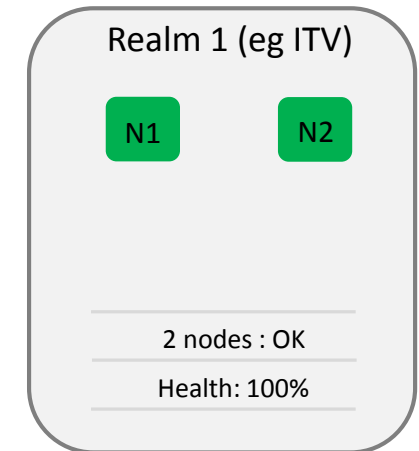


As part of an AMSware-lite the user benefits from a fully managed and easy to use workflow solution


## Chameleon – Multi function / Parallel operation Transcoder

- **Operation**

- **Nodes**
  - A node is an instances of a transcoder
- **Realms**
  - A realm is a bank of transcoder nodes that can be allocated to specific users or business areas (such as a TV channel)
  - The number of nodes per realm is set up at configuration
  - A realm can be defined as Auto and so can be used by any user if it has any free nodes
- **Chameleon *Stand Alone* and Chameleon Gold *Enterprise* products**
  - **Chameleon *Stand Alone***
    - Supports 4 nodes
    - Supports 3 realms (User defined and allocated to specific users / applications)
  - **Chameleon Gold *Enterprise* solution**
    - Built as required for the client



*E.g. Realm 1 with 2 nodes*

 **John**

[Home](#) [Admin](#) [Edit Jobs](#) [Jobs Status](#) **[System Status](#)** [Management](#)

---

### EDIT JOB

[Create New Job](#)  
[Edit / Delete Job](#)

### JOBS STATUS

[Overview](#)  
[Job Queues](#)  
[Held Queues](#)

### System

[Manage Realms](#)  
[Manage Transcoders](#)  
[Settings](#)

### Media

[Profiles](#)  
[Assets](#)

### Users

[Manage Users](#)  
[Your Profile](#)

## Transcoder Nodes Status

[Realm 1](#) [Realm 2](#) [Realm 3](#)

### Realm 1 (ITV)

N1 N2

---

1 node : Warning  
Health: 75%

### Realm 2 (Ch4)

N1

---

1 node : OK  
Health: 100%

### Realm 3 (Auto)

N1

---

1 node : OK  
Health: 100%


---

## Error and Warning Messages

[Log messages](#) [Event Messages](#)

Realm 1 (ITV)	Total nodes : 4	Issue node : 2	Status : All OK
Realm 2 (Ch4)	Total nodes : 2	Issue node : 1	Warning : High memory usage

Switch for [system log messages](#)



**bci digital**  
big ideas for a big planet

 John

Home Admin Edit Jobs Jobs Status **System Status** Management

## EDIT JOB

Create New Job  
Edit / Delete Job

## JOBS STATUS

Overview  
Job Queues  
Held Queues

## System

Manage Realms  
Manage Transcoders  
Settings

## Media

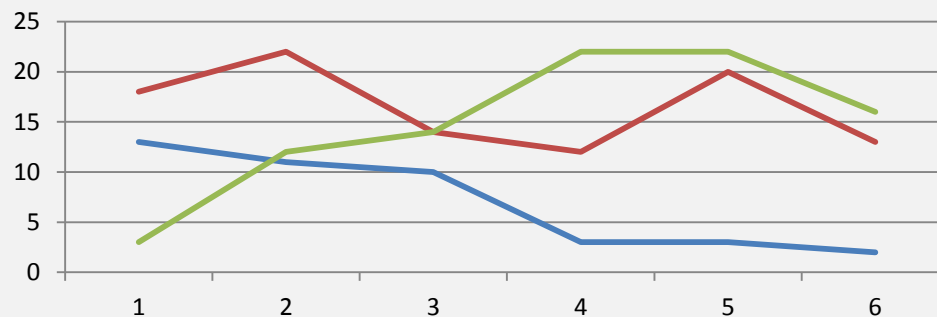
Profiles  
Assets

## Users

Manage Users  
Your Profile

### Overview - Throughput

All Realms Realm 1 Realm 2 Realm 3



✓ Realm 1  
✓ Realm 2  
✓ Realm 3

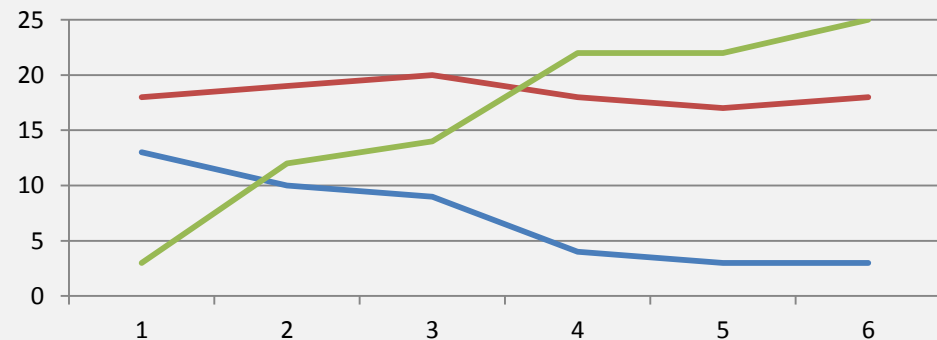
Time scale

1 week ▾

### Overview - Memory

All Realms Realm 1 Realm 2 Realm 3

Warning  
Realm1  
node2



✓ Realm 1  
✓ Realm 2  
✓ Realm 3

Time scale

1 week ▾

## Chameleon – Multi function / Parallel operation Transcoder

- **Chameleon *Stand Alone* System**
  - Rack Mount server machine
  - 100G Ethernet interfaces (operation and management interfaces)
  - 3 Realms (user defined) / 8 nodes (processing blocks)
- **Chameleon Gold *Enterprise* Solution**
  - Multiple Rack Mount server machines
  - Built-up and networked to suit customer requirements
  - Management software configures / supports entire transcoder farm





# BCi digital

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Thank you for your time

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