IATA GLOBAL AIRPORT & PASSENGER SYMPOSIUM
Warsaw, Poland
15 - 17 October 2019

Building Capacity for the Future
PUTTING THE REGULAR INTO THE IRREGULAR OPERATIONS

Wayne Phaup, Senior Manager, Custom Solutions and Recovery, United Airlines
Vicky Scherber, Senior Director Passenger and Baggage Processes, Lufthansa Group
Al Tredinnick, Head of Business Development, 15 Below
Simon Wilcox, Head of Transformation, Automation and Innovation, Heathrow Airport

MODERATOR: Guido Peetermans, Head, Passenger Security, IATA
Lufthansa Group Strategy on Service Recovery

October 15th, 2019
Vicky Scherber
Irregularity trigger are likely to become more frequent

If things go bad, loosing control means using faith
We must ensure professional and reliable services, especially in recovery situations

<table>
<thead>
<tr>
<th>Service Recovery Strategy</th>
<th>Customer Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliable, near-time <strong>information</strong> on status and next best action, consistent on all channels</td>
<td>✓ I know what the situation is, what service I can expect and <strong>what my next best actions are</strong></td>
</tr>
<tr>
<td>Provide <strong>solution</strong> (alternative flight rebooking, hotel etc.) within 20Min* after incident and inform about next best action</td>
<td>✓ I can count on getting a <strong>meaningful alternative within a reasonable timeframe</strong> to be able to adjust my schedules</td>
</tr>
<tr>
<td>Provide <strong>self service tools and choices</strong> to prevent queues, waiting times and loss of control</td>
<td>✓ If I need a different solution, <strong>I don’t have to queue somewhere</strong> but can do it on my own instantly, wherever I am</td>
</tr>
</tbody>
</table>

*I: Long Term target, potentially needs resources and cannot be fulfilled in heavy irreg.
We have made good progress with the initiatives already implemented in 2018, however there are still major pain points to be addressed.

Major measures and achievements until end 2018

- **Introduction of mandatory contact info input** during online & kiosk check-in to increase reachability.
- **Integration of passenger rights info** in Irreg e-mail notification.
- **Introduction of Irreg websites** to provide centralized info to passengers in case of heavy Irreg.
- **Improvement of automated re-bookings** OPB options & RBC staff availability.
- **White-listing of LH App on Kont** to access info and self services already on board inflight.
- **Introduction of delayed bag service** at kiosks and mobile.
- **Introduction of chat bot** for self service re-bookings.
- **Increase of staff** + 300 FTEs in feedback management + 230 FTEs in Service Centers.

IATA GAPS, Warsaw
15.Oct 2019
Page 7
Due to our clear roadmap initiated, the customer service recovery experience will improve significantly in 2019/20
The umbrella is there... we just have to hand it out to our passengers

Thanks for your attention!
JOIN US FOR COFFEE BREAK IN THE EXHIBIT HALL
BAGGAGE: GET YOUR SHARE OF 3 BILLION DOLLARS

Sponsored by:

Kim Abildgaard, Sales Director, Lyngsoe Systems
Peter Drummond, Director, Baggage Portfolio, SITA
Mahdi Mekic, Marketing Director, RAIN RFID, NXP

MODERATOR: Andrew Price, Head, Global Baggage Operations, IATA
Getting your share of $3bn
The Session Today

The Framework
Madhi Mekic
RAIN RFID & NXP

The Tag
Kim Abildgaard
Lyngsoe Systems

The Infrastructure

From Data to Action
Peter Drummond
SITA

Q & A
The Framework

**STANDARDS**
AGM Resolution Recommended Practice 1740c
Resolution 740

**GUIDANCE**
Implementation Guide
Fact Sheet
[www.iata.org/RFID](http://www.iata.org/RFID)
Business Case
Strategic Partner Directory

**EDUCATION**
IATA Meetings
Webinars
Workshops
Events
Consultancy
Training

PASSENGER BAGGAGE
IATA - ACI Joint Collaboration in Baggage

Joint aims
• Improving baggage handling operations
  • Reducing mishandling
  • Improving efficiency
  • Promoting customer service

Common workstreams
• Joint approach to baggage tracking
  • Adoption of IATA Reso 753
  • Baggage messaging
• Helping Airports with RFID where it meets their needs
RFID MICROCHIP IN YOUR BAGGAGE TAG:
WHAT CAN IT DO?

IATA GAPS Warsaw 15-17 October 2019

MAHDI MEKIC
MARKETING DIRECTOR
PL SECURE TRANSACTIONS AND IDENTIFICATION
NXP SEMICONDUCTORS
NXP SEMICONDUCTORS

World’s #1 provider of Secure Connections for a Smarter World

7TH largest semiconductor company

Operations in 30+ countries

Headquarters: Eindhoven, Netherlands

28,000+ employees

10,000+ engineers

9,000+ patent families

60+ year history

$9.41B annual revenue

Sources: HIS, ABI Research, Strategy Analytics, The Linley Group
1) MCU market excluding Automotive
2) Excludes memory
3) Posted revenue for 2018
NXP’s Position in Baggage Tags

CHIP

CHIP + ANTENNA = INLAY

BAG TAG
<table>
<thead>
<tr>
<th>Benefit</th>
<th>Value</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read without line of sight</td>
<td>✗</td>
<td>$</td>
</tr>
<tr>
<td>Read speed in line</td>
<td>1 item at a time</td>
<td>~ 10.000$</td>
</tr>
<tr>
<td>Read point cost</td>
<td>~ 10.000$</td>
<td>~ 1.000$</td>
</tr>
<tr>
<td>Read/write capability</td>
<td>✗</td>
<td>$</td>
</tr>
<tr>
<td>Tamper detection</td>
<td>✗</td>
<td>$</td>
</tr>
<tr>
<td>Read accuracy</td>
<td>80%</td>
<td>$</td>
</tr>
<tr>
<td>Security</td>
<td>✗</td>
<td>$</td>
</tr>
<tr>
<td>Price</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Savings</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>
WHAT DOES THE RFID CHIP CONSISTS OF?
# RFID Microchip Memory Structure

## TID (Tag Identifier)
- TID Tag Identifier (preprogrammed & locked)
- Chip manufacturer information, unique serial number

## EPC Memory
- Electronic Product Code (EPC number)
- Code can be written by user

## Reserved Memory
- Access and Kill Password
- AFI (Application Family Identifier)

## User Memory
- Manufacturing, quality and product related data storage
- User related data storage
BENEFITS OF THE TID MEMORY

- Guarantees uniqueness of each baggage tag
- No hassle for anyone in the ecosystem because it is pre-programmed
BENEFITS OF THE EPC MEMORY

- Basic encoding of the baggage tag (e.g. LPN or JD (License Plate Nr. or Julian Date))
- Fastest accessibility of the most relevant data (per definition by the standard)
BENEFITS OF THE RESERVED MEMORY

- Limit access to tag data or the ability to write to only authorized parties in the eco-system
- Provide the possibility to electronically “kill” the tag after it has been used
- Mark the tag electronically so that it is clear that it is an airline baggage tag and not else
BENEFITS OF (the optional) USER MEMORY

- Offers rich encoding possibility
- Store on the tag not only LPN and JD but also other information, e.g. flight routing
QUESTIONS?

MAHDI MEKIC
MARKETING MANAGER DIRECTOR RAIN RFID
NXP SEMICONDUCTORS
mahdi.mekic@nxp.com
GET YOUR SHARE OF 3 BILLION DOLLARS

THE REAL VALUE MAY BE HIDDEN IN THE DETAILS?
BAGGAGE LOGISTICS - END TO END VISIBILITY

PASSENGER EXPERIENCE

OPERATIONAL EXCELLENCE
BAGGAGE LOGISTICS - END TO END VISIBILITY
BAGGAGE VISIBILITY

ENABLE YOU TO:

· Reduce number of mishandled baggage
· Provide a hassle-free baggage journey
· Improve passenger service by improving communication
· Improving operational efficiency with lower cost
· Reduce fraud
· Be prepared for Artificial Intelligence (AI) adoption
R753 compliant scanning at the load point

- **AUTOMATED MORE THAN 99% DATA ACCURACY**

Speed up the loading by optimizing staff

- **1 FTE PER FLIGHT SAVED AND 4 MIN FASTER LOAD PER FLIGHT**

Enable data driven real-time decisions

- **REDUCE PASSENGER NO-SHOW DELAYS**
FULLY AUTOMATED AND ACCURATE VISIBILITY ON INCOMING BAGGAGE THAT ENABLES SEPARATION ON THE TARMAC

ACT ON REAL-TIME INFORMATION

MANAGE SHORT-CONNECTION, TRANSFER, TAIL-2-TAIL AND PRIORITY BAGGAGE

REMOVE FOCUS AND RESOURCES FROM BAGGAGE THAT ARE TOO LATE FOR RECOVERY
FULLY AUTOMATED AND ACCURATE R753 COMPLIANCE THAT ENABLES PASSENGER NOTIFICATION

YOUR BAG IS NOW AVAILABLE AT RECLAIM CAROUSEL NUMBER #2

SORRY, YOUR BAG HAS NOT ARRIVED - PLEASE PROCEED TO YOUR DESTINATION – WE WILL DELIVER YOUR BAG TOMORROW AT 8 AM
FULL BAGGAGE MONITORING AND TRACEABILITY ENABLES INSTANT CUSTOMER SERVICE

LOOKUP YOUR SYSTEM:

BAG IS IN THE CLAIM AREA

BAG ARE STORED IN LOST & FOUND

BAG DETAINED BY AUTHORITIES

BAG HAS LEFT THE AIRPORT
TO ACHIEVE YOUR SHARE OF THE 3 BILLION YOU WILL HAVE TO:

TRUSTED BAGGAGE TRACKING INFORMATION

• Barcode scanning accuracy is average 85%

CAPTURE DATA FROM MORE TRACKING POINTS

• Barcode scan single bags, requires line-of-sight and singulation

ANALYTIC AND AI ADDOPTION

• We can't afford the machines to make decisions on unreliable information
RFID ENABLES YOUR BUSINESS IMPROVEMENTS

>99% Reading Rate

PROTECT YOUR INVESTMENTS

WHERE DO WE ADD VALUE

LET’S TAKE THE JOURNEY TOGETHER

Kim Abildgaard
Business Development
kab@lyngsoesystems.com
+45 2045 1858
What to do with all that data?

IATA GAPS, Warsaw

Peter Drummond, Portfolio Director, SITA

16 October 2019
SITA and the businesses we run

AIR TRAVEL SOLUTIONS

Airline operations

Airport operations, Baggage processing, Passenger processing

Border management

SITA Passenger Service System (SITA PSS)

Aircraft operations (cockpit and cabin services), Connected aircraft

Cargo management, community integration, eCargo
SITA Baggage Portfolio

Reducing the costs of handling bags by enabling our customers to benefit from Resolution 753

- **BagMessage** (Message Distribution)
  - 162 customers in 257 airports
- **BagManager** (Baggage Management)
  - 86 customers in 209 airports
- **BagJourney** (Baggage Repatriation)
  - 22 customers
- **WorldTracer®** (Baggage Delivery Service)
  - 510+ customers in 2,800 airports

**LET'S MOVE THE WORLD, TOGETHER**
The traditional approach to baggage data
Statistic gathering and analysis

LONG TERM DECREASE IN BAGGAGE MISHANDING

REASONS FOR DELAYED BAGS

Source: SITA 2019 Baggage IT Insights
Before baggage digitalization
Baggage tracking and reconciliation
### Baggage Tracking and Reconciliation

**Flight Information**
- **Flight:** BA1234 29-Jul
- **Status:** Open
- **STD:** 08:13
- **ECD:** 08:13 (To Dep: 07:05)
- **Gate:** G01
- **Stand:** ST01
- **Registration:** REG001
- **Aircraft Type:** A380
- **Last BMI:** 20

**Loading Status**
- **Not Loaded:** 120
- **Offloaded:** 120
- **Loaded:** 120
- **On Aircraft:** 120

**Additional Bag Information**
- **Total**
- **Local**
- **Inbound**
- **Outbound**
- **UNK**
- **Own**
- **Crew**
- **Gate**

**Reconciliation**
- **Destinations:** To Offload, To Onboard, Never on Aircraft, OOG, Heavy, Marked, Stopped, Inactive, Deleted, Pax with Bags

**Track Bag Progress**
- **Flight ID:** BA1234 29-Jul
- **Inbound Connections**
  - KL1234, 12:00, 401, 999, 999
  - KL1234, 12:00, 401, 999, 999

**Not Reconciled Bags**

**ULD/Hold List**

---

![Image of baggage handling](image.png)
Data use now
IATA 753 provides for end-to-end BagJourney information

Collecting baggage data across multiple baggage systems

Provides a precise picture of bag’s current location, no matter how many airlines or airports it handle it.

Can use Type B, Web services, Json APIs or XML

Bag checked in  Bag offloaded

Bag sorted  Bag arrived

Bag passed security  Bag loaded on aircraft

Bag reflighted  Bag loaded into container
Mobilize your ground staff
Through APIs and mobile apps

Bag status

YOUR LONDON AIRPORT Gatwick

Arrivals Flow Rate of 24/hr from 1740-1900hrs due to high winds. Peak demand 27% AFL

Passengers landing in the next hour

ST - Hourly arrivals: 1,571
NT - Hourly arrivals: 2,279

Emergency State None
Runway Open
Weather Wind State 2B
IT/Infra No issues

LET'S MOVE THE WORLD, TOGETHER
Inform your passengers
Through your own passenger app
End-to-end visibility
Gain insight into where the bag is no matter what airline partner
Analyze your operations
Using the full E2E visibility

Delivering analytics as a service

- PULSE
  - Passenger Pulse
  - Queue Pulse (ex-MEXIA)
  - Baggage Pulse*
  - Turnaround Pulse*

- PREDICTOR
  - Flight Arrival Predictor
  - Flight Link Predictor*
  - Load Predictor*
  - Resource Predictor*
  - Turnaround Predictor*

- ADVISER
  - FlowAdviser
    - (PFM to be added)

Provide industry insights

YEAR SUMMARY

- Year 2017
- Year 2018
- Year 2019

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

AHL Performance Trend

- Total bags: 29K
- Files Opened: 8023
- Files closed: 14K
- Files still open: 6764
- Files still open (%): 0.32

SITA
Data protection

Enabling better data usage
Baggage data privacy

THE STAKE HOLDER’s:

Passenger:
- Valid ticket holders
- In contractual relationship with an airline (via a ticket purchase)
- Can be interested in auxiliary services from 3rd-party merchants (e.g.: baggage insurance, baggage collection and delivery, baggage tracking and localisation, etc.)

Airline:
- In contractual relationship with a passenger (via a ticket purchase)
- Responsible for the transportation of the passenger and his baggage from Point A to Point B.
- Can be interested in offering auxiliary services to his passengers

Airport:
- In contractual relationship with an airline (via operating/ground handling agreements)
- Responsible for providing airport facility to enable aircraft/passenger and baggage transportation
- Can be interested in offering auxiliary services to “his” passengers

3rd-party merchants:
- Capable of providing auxiliary services to improve passenger’s travel experience (e.g.: baggage insurance, baggage collection and delivery, baggage tracking and localisation, etc.)
- Is interested in getting access to the baggage handling status, to be able to provide his service
BagTrust
Enhanced data sharing control

Empowers airlines and airports to set data distribution rules and preferences to control data sharing with partners.

- More transparency in how the passengers’ data is stored and shared
- Enable data policies and GDPR regulations
- Web UI access at no extra cost
- Provides complete control over collected BagJourney data
- Decides per partner who has access to which data
Baggage data
A glimpse into the future
The Digital twin bag
Thank you

Any questions?

LET’S MOVE THE WORLD, TOGETHER
JOIN US FOR LUNCH IN THE EXHIBIT HALL
SHORT AND SHARP: ALL AROUND CONNENCTIVITY

Sponsored by:

Bernard Hensey, Vice President of Business Development, Boeing Global Services
TURNING THE DAY OF TRAVEL INTO MAGIC AGAIN

Sponsored by:

Michael Eggenschwiler, Chief Executive Officer, Hamburg Airport
Sebastian Mikosz, Chief Executive Officer, Kenya Airways

MODERATOR: Ursula Silling, Chief Commercial Officer, Kenya Airways
TURNING THE DAY OF TRAVEL INTO MAGIC AGAIN

Sebastien Aponte, Aircraft Interiors Marketing Manager, Airbus
Don Buchman, Vice President, ViaSat
Michael Eggenschwiler, Chief Executive Officer, Hamburg Airport
Bernard Hensey, Vice President of Business Development, Boeing Global Services
Sebastian Mikosz, Chief Executive Officer, Kenya Airways
Michael Nowak, Marketing Director, Embraer

MODERATOR: Ursula Silling, Chief Commercial Officer, Kenya Airways

Sponsored by: Viasat

Pathway – The World of Interactive Data
JOIN US FOR COFFEE BREAK IN THE EXHIBIT HALL

Sponsored by:

POS Aviation
Airlines and Airports Working Together in the Digital World

Christian Baillet, Director Airline Account Management, Amadeus
Rolf Felkel, Senior Vice President Application Development, Fraport
Eelco Folertsma, Business Architect, KLM

MODERATORS: Marie Masserey, Head, Industry Architecture, IATA
Serge Yonke, Senior Manager, Airport IT, ACI
Airlines and Airports

Working Together in the Digital World
Airlines and Airports
Working Together in the Digital World

Speakers and panelists
• Christian Baillet, Director Airline Account Management, Amadeus
• Rolf Felkel, Senior Vice President Application Development, Fraport
• Eelco Folkertsma, Business Architect, KLM

Co-moderators
• Marie Masserey, Head Industry Architecture, IATA
• Serge Yonke, Senior Manager Airport IT, ACI

Pathway – A World of Interactive Data
Pathway – A World of Interactive Data
ALL GREAT JOURNEYS START HERE

Airports and Airlines collaborating in the digital world
Christian Baillet
Warsaw, Oct. 16, 2019
Airlines & airports sharing data = a big opportunity

- Future growth calls for efficient use of constrained infrastructure
- Complex operations (1 aircraft turn-around requires 70 activities)
- Many stakeholders involved
Expected benefits

- Optimize resources (fixed assets & staff)
- Deliver a seamless customer experience
- Boost retailing
Tremendous need for better collaboration

Use case: Share flight operations data to optimize fixed resources, turnaround time, and customer experience
Call to action

- Work together – positive intention
- Share data to remove blind spots – tools & processes

Create incremental value for both, airport and airline
ALL GREAT JOURNEYS START HERE

Thank you!
Dr. Rolf Felkel, SVP Application Development, Fraport AG
Passenger Experience and Operational Excellence – Common Goals of Airlines and Airports

How data exchange can foster our common goals:

• Airline-2-Airport: passenger numbers and transfer relations per flight
  helps Airport to forecast passenger flow and predict demand at process points (e.g. security or border control)

• Airport-2-Airline: boarding pass scans (BCBP + timestamp) prior security
  helps Airline to improve boarding process

• Collaborative use of (mobile) passenger information channels
  helps passengers to manage their journey using consistent information throughout Airline and Airport mobile apps

... and there are many more examples where we can only succeed together!
The Joined Data Lab of Lufthansa and Fraport – a new approach to solve old problems

The starting point:

- A set of old, but still unanswered questions: Which factors are influencing the “No-Show” rate?
- Anonymized data from both companies provided to a cloud based analytics platform
- A defined format: six weeks of time, all data scientists in one physical and virtual room, and
- No blinkers or restrictions!

The results:

- A very good insight in a really complex topic!
- The joined decision to develop a prediction model that can be used by both companies to support operations!
- To have a second JDL in Q1 2020!
- To foster data exchange between the two companies!
Standards support data exchange by increasing interoperability and reduce costs

How data and technical standards make data exchange easier:

• More interoperability between IT systems
• Common understanding
• Faster implementation
• Reduced costs

Layers of data exchange standards

• Semantics
• Data definition
• Interface definition (using state-of-the-art technology)

IATA and ACI (and others) to support standards

• Collaborate on a industry level
• Airlines, airports, suppliers: join working groups like ACI ACRIS or IATA Baggage XML
• Forcing the spread of standards by challenging our IT suppliers to implement them
Why do we often hesitate? Are we still in the old silos? Let us start to overcome the old habits!

Data exchange sounds reasonable and manageable! But why is it in 2019 still a topic on a conference schedule?

Yes! We are too often still thinking in our old silos!

Two impulses:

• Understand that shared data is not automatically a lost USP or dangerous transparency!
• Shared data is powerful data to help our common customer – the passenger – and to support our whole industry!

The plea: Get out of the silo!

• Have the courage to collaborate and exchange data throughout our industry!
• Support standards wherever and however you can!
• Let the passenger experience and the operational excellence be our common goal!
Gute Reise!  
We make it happen

Dr. Rolf Felkel  
SVP Application Development  
Fraport AG
Forecasting and planning the day of operation

As perceived through airline eyes
Eelco Folkertsma – KLM
October 2019 - GAPS
Profile of KLM

• 100 years KLM!

• Single hub network as airline
• Part of 40+ hubs SkyTeam alliance
• In 2018, 34 million KLM passengers to 166 destinations
• At main hub, 70% is transfer including strong presence of alliance partners
• At most of 40 SkyTeam hubs transfer is significant part of traffic
• Highly interwoven networks of planes and people, and time is precious to all
What drives the airline

Airline looks at good passenger experience and operational excellence. Where airline (or alliance) has larger presence, airline and airport shall actively collaborate to improve performances.

So, exchange of planning information in weeks..hours prior to operation should facilitate:

- Seamless flow to passengers
  - No waiting times thanks to smart routing of crowd and sufficient capacity at filters
  - Bag flow in tune with passenger flow for bag drop and bag reclaim

- Predictable turn around times
  - Airport resources available and discoverable as required
  - Just in time ramp service delivery
Balancing between
• near enough and not too near

• Near enough
  – Airport needs to manage passenger and baggage flows through terminal and over platform
  – KLM understands the need to provide indication of passenger and bag volumes into/out an airport next to advising schedules

• Not too near
  – Traveler privacy should be respected
  – KLM sees its traffic flows as commercial asset

• Forecast of volumes at airport should
  – Not disclose traveler identifying information unless bound to execution of contract
  – Not disclose which markets are being served by KLM and partners
• **Current standards (IATA)**
  
  - Predominantly geared to airline and its agents, and aimed at operational detail
  - Almost no support to communicate allocation of airport resource or ramp service delivery (e.g. catering)

<table>
<thead>
<tr>
<th>Fit</th>
<th>Area</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support airport need</td>
<td>Schedules, movements of aircraft</td>
<td>SSM, ASM, MVT</td>
</tr>
<tr>
<td>Standard exists but friction on detail</td>
<td>Passenger and baggage (load)</td>
<td>PNL, PRL, BSM, BMM</td>
</tr>
<tr>
<td>No standard (yet)</td>
<td>Ramp logistics</td>
<td>((AIDX))</td>
</tr>
</tbody>
</table>
Let us look for

• Forecast flow of passenger and baggage
  – Greying out by location (e.g. root of pier, a baggage hall)
  – Greying out into time blocks (e.g. volume per 15 minutes)
  – Greying out into scaled numbers (e.g. volume on scale 1,3,10,30,100)

• Allocation of airport resources
  – Greying out to sets of resources (e.g. 50% of desks in terminal)
  – Greying out in scaled times (10, 30, 100 minutes from a start time in quarter hours)

• Allocation of ramp service delivery
  – Reusing above concepts for greying out in forecast/planning

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Business Pillar of BRD

<table>
<thead>
<tr>
<th>Objective</th>
<th>High utilization, low stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actors</td>
<td>Traveler, handler, airline, airport</td>
</tr>
<tr>
<td>Terms</td>
<td>Schedule, slot, resource, load</td>
</tr>
<tr>
<td>Process</td>
<td>Forecast, optimize, deliver</td>
</tr>
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</table>
Airlines and Airports
Working Together in the Digital World

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Building global industry standards

- Sharing information
- Pooling resources
- Solving problems together
- Sharing methodology and tools
- Mirroring standards

Pathway – A World of Interactive Data
JOIN US FOR A COCKTAIL RECEPTION IN THE EXHIBIT HALL AT 18:30