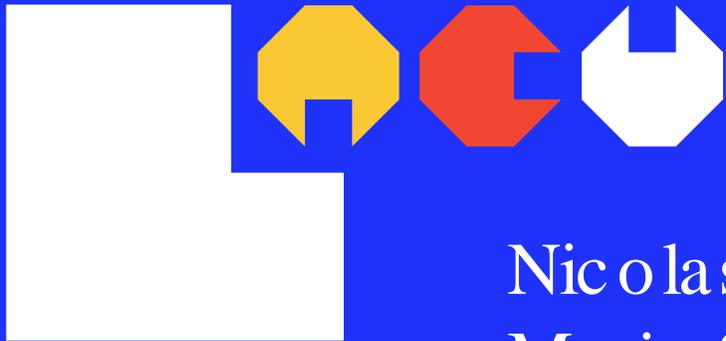


Dangerous Good Automation



Nicolas Carlone, IATA
Mario Sagastume, Labelmaster
Bill Wojtas, United Airlines



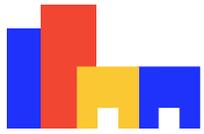
What is Automation?

Technology-enabled automation of complex business processes

Examples of business automation



Roles and Responsibilities



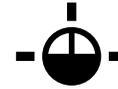
Shipper

- Pack
- Label
- Document
- Prepare SDDG



Freight
Forwarder
@ origin

- Receive shipment
- Initial acceptance check
- Add AWB number
- Decide the mode of transport
- Generate SDDG (occasionally)



Airlines

- Receive shipment
- Check/Validate
- Accept
- Generate NOTOC
- Load freight
- Hold documents

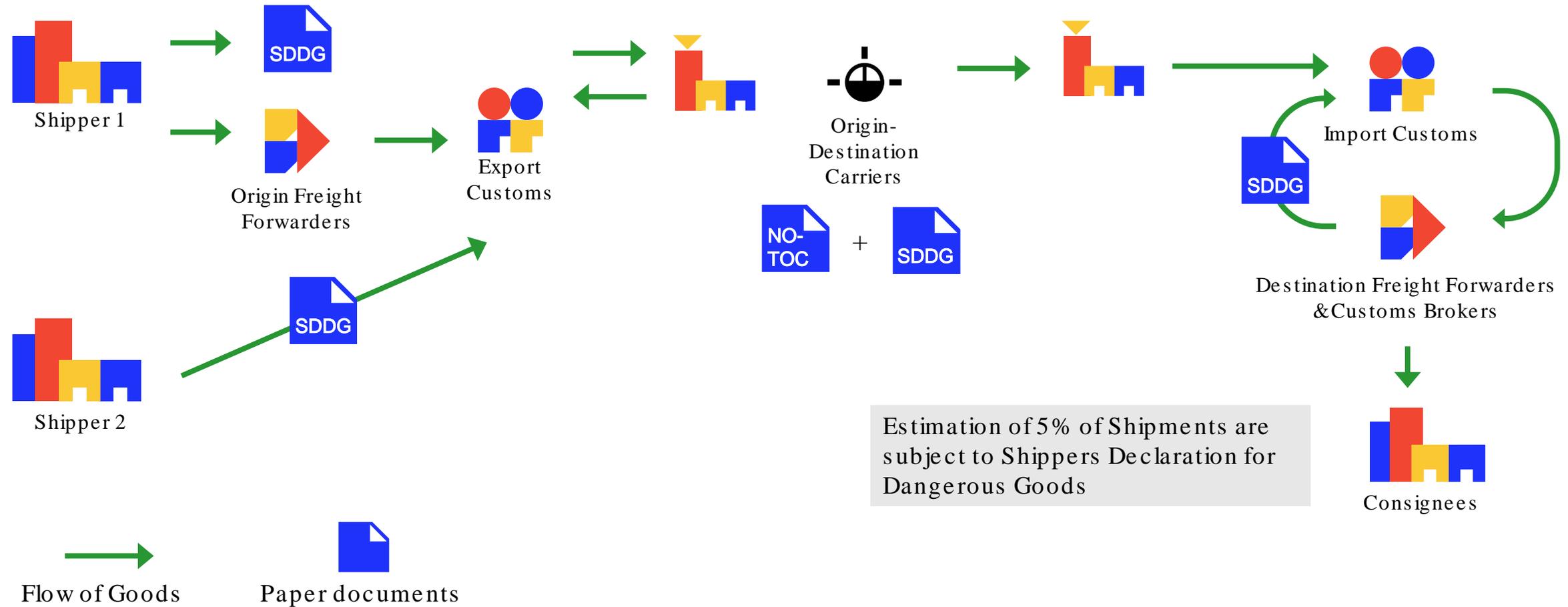


Freight
Forwarder
@ dest

- Receive Data
- Action
- Handling
- Hand over to consignee

The Dangerous Goods Declaration

Current Status





DG Processing Pain Points

1

Regulatory environment getting more and more complicated

2

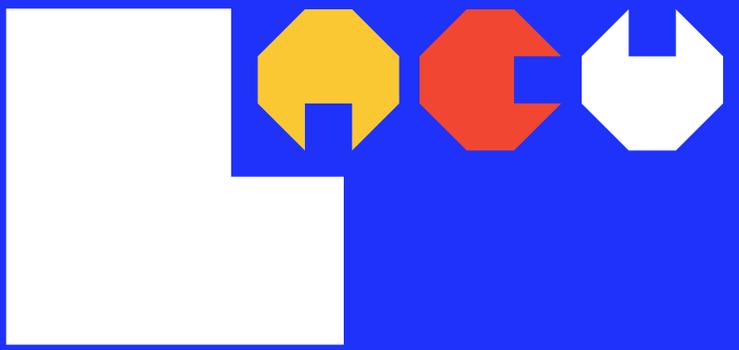
Non-compliant shipments making their way onto aircraft improperly checked

3

The time it takes to prepare DG shipments or perform DG checks is high



The industry pulse





The accuracy, completeness, transparency and standardization of DG data across supply chain partners is a huge gap

45% DG Pros believe master data is not centrally stored, communicated or transparent across the supply chain
Q15 survey

55% DG Pros believe master data that is provided by upstream supply chain partners is not complete, accurate or transparent
Q15 survey





Companies use multiple types of technology and manual processes to move DG (Q17)

55% of companies use some type of manual processing
Q17 survey

North America companies more likely to leverage carrier-provided technology

Companies that view DG as a competitive advantage more likely to leverage DG-specific technology along with other shipping software



Simply relying on a Company's existing ERP/WMS/TMS tech may not be enough

30% of DG Pros who use ERP systems believe it has 100% DG functionality

41% of DG Pros who use general shipping or warehouse management software believe it has 100% DG functionality
Q17 survey

Pain Points of Manual Processing



Communication

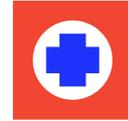
systems and document integration:

- **Planning**
shipment info supplied with shipment, not in advance
- **Performance**
risk of incident increase with not having experts on site if not planned correctly
- **Efficiency**
systems not able to deliver efficiency savings



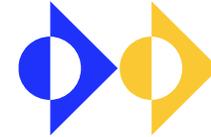
Performance

slower handling & acceptance procedures without data automation / validation



Safety

greater risk of missing compliance with manual processes



Automation

Inputs are not electronic today meaning less demand for automation

Pain Points IMPACTS



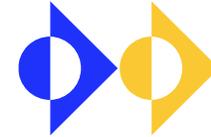
Communication



Performance



Safety



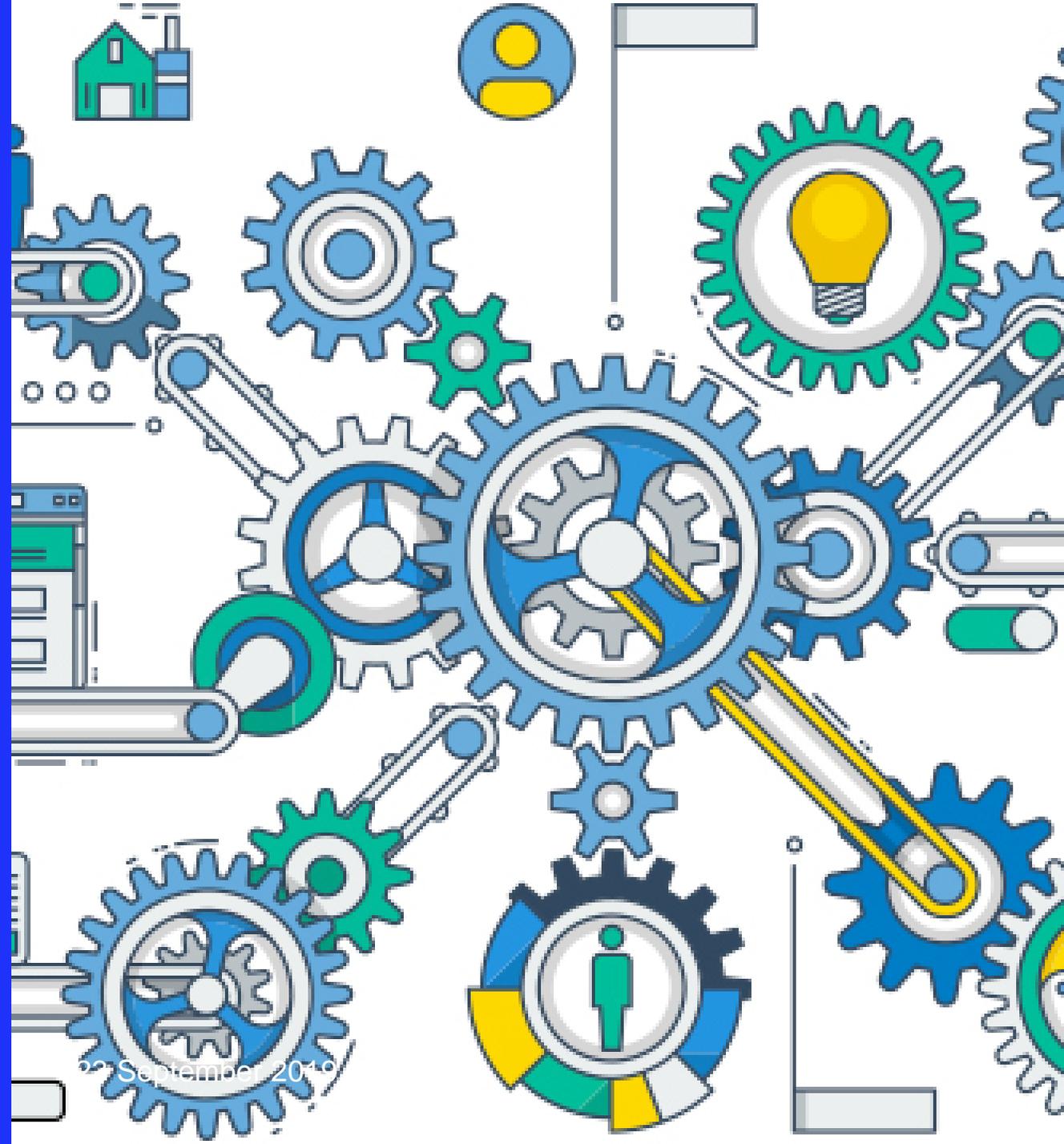
Automation

Fines Loss of license **Competition**
Delays **Client relationship issues**
Safety incidents Damages
Jail terms Efficiency issues

COST\$

Benefits of Automation

- Increased Productivity
- Improved Operational Efficiency
- Streamlined Communication
- Reduced Time and Costs
- Improved Quality
- Greater Visibility
- More Efficient Task Management
- Greater Customer Satisfaction





DANGEROUS GOODS SYMPOSIUM

Mario E. Sagastume
Software & Customer Success
Labelmaster

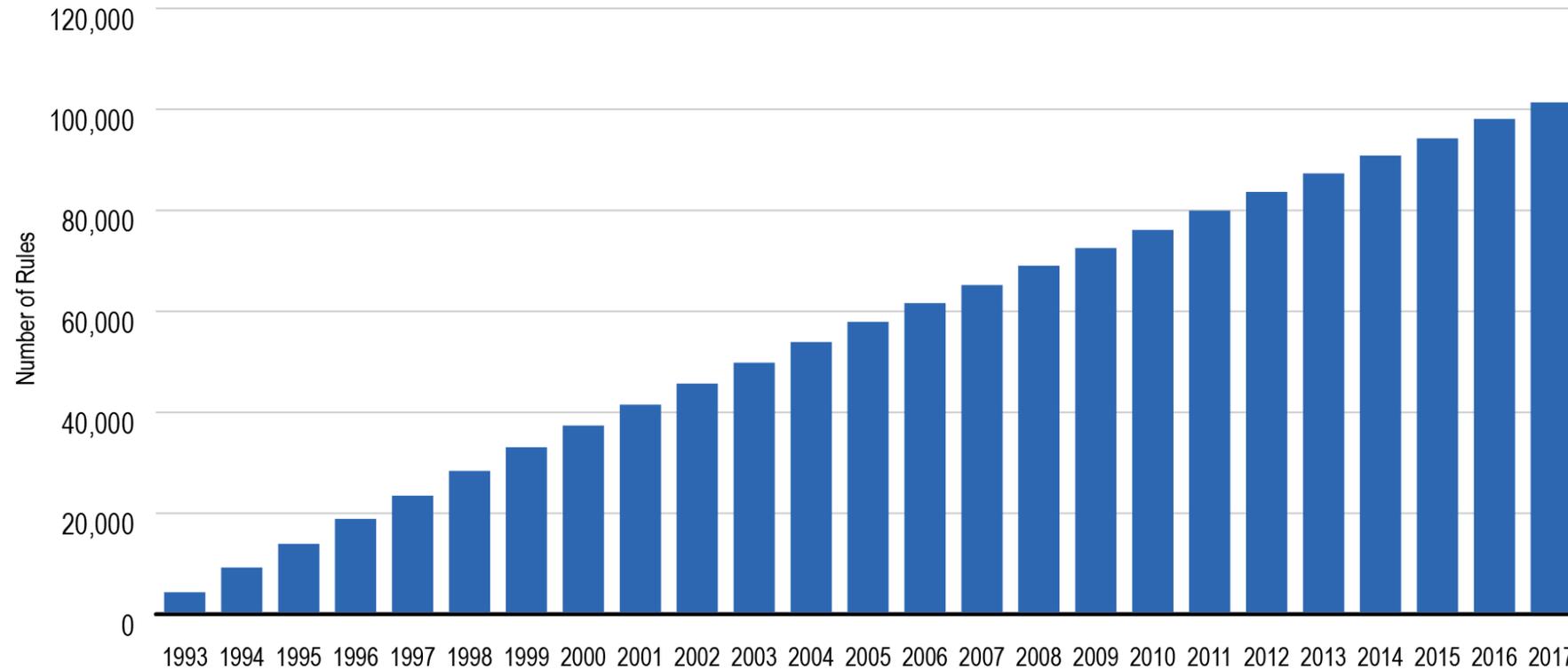
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SOFTWARE PRODUCTS SERVICES

Cumulative Final Rules Published in the *Federal Register*, 1993–2016

At least 3,000 rules are added each year. 101,380 rules and regulations over the past 24 years.



Source: National Archives and Records Administration, Office of the Federal Register.



...but wait, there's so much more...

WHAT, EXACTLY, ARE DANGEROUS GOODS?

It might seem like a self-explanatory term: Dangerous Goods are goods that are dangerous. But when it comes to shipping these kinds of things, the details can make all the difference.

The generally accepted definition of Dangerous Goods (or hazardous materials) from the US DOT is: "Any substance which may pose an unreasonable risk to health and safety of operating or emergency personnel, the public, and/or the environment if not properly controlled during handling, storage, manufacture, processing, packaging, use, disposal, or transportation."

The Hazardous Materials Table (HMT) in Title 49 CFR 172.101 lists 3,600+ individual items considered to be Dangerous Goods.



Shipping Information is KEY!!!

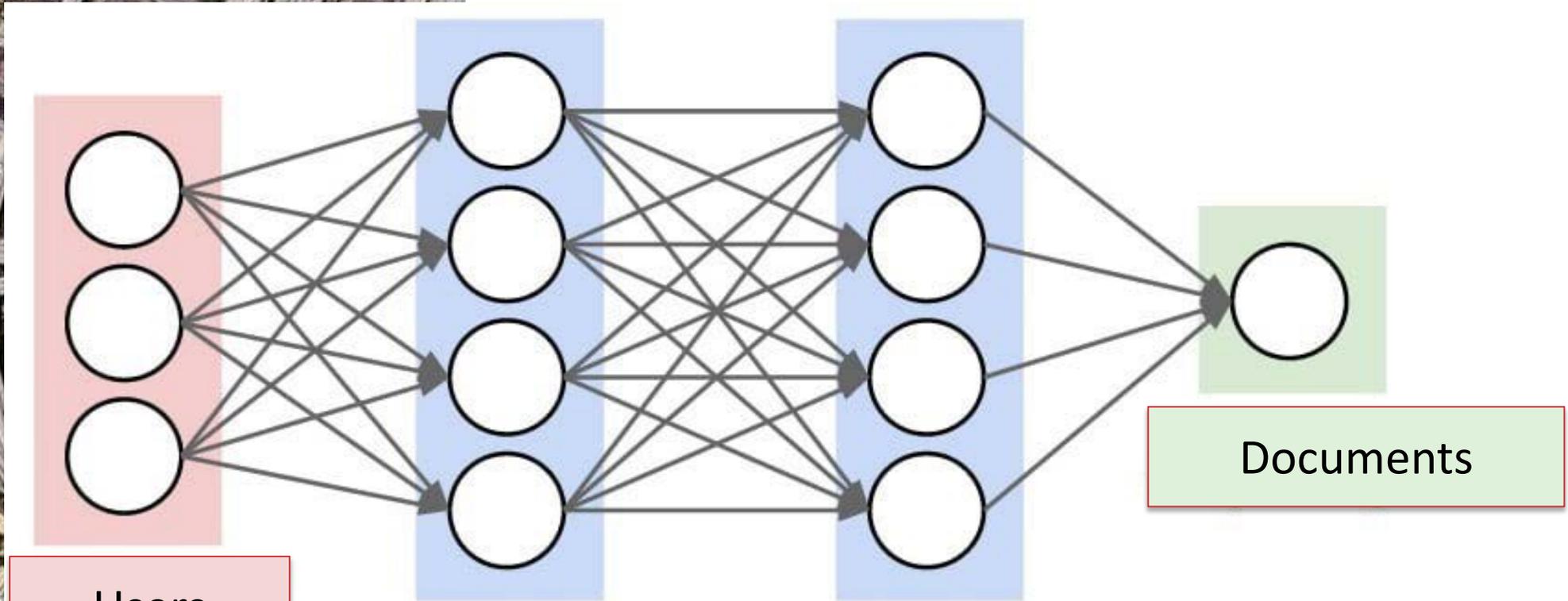


Typical tasks when shipping hazmat (information, validation, declaration)

- DG / Hazmat classification
- SDS / MSDS development
- Employee training
- Label / markings / packaging
- Regulatory awareness, insight and direction
- Special permits
- Lithium battery testing / state of charge info
- Document generation
- Preparing the shipment
- Validating the shipment (hazmat)
- Procure carrier(s)
- Select carrier(s)
- Addresses
- Terms agreement
- Transit tracking, monitoring, securing
- Placarding
- Supply chain partner / Carrier acceptance
- Supply chain partner / Carrier drop off(s)
- Loading and unloading
- Storage and drayage
- Document handoff
- Incident tracking, identification, monitoring and remediation
- Incident communication across supply chain
- Routing & Re-routing



Automation is necessary to survive



Users

Material

Regulations

Regulated

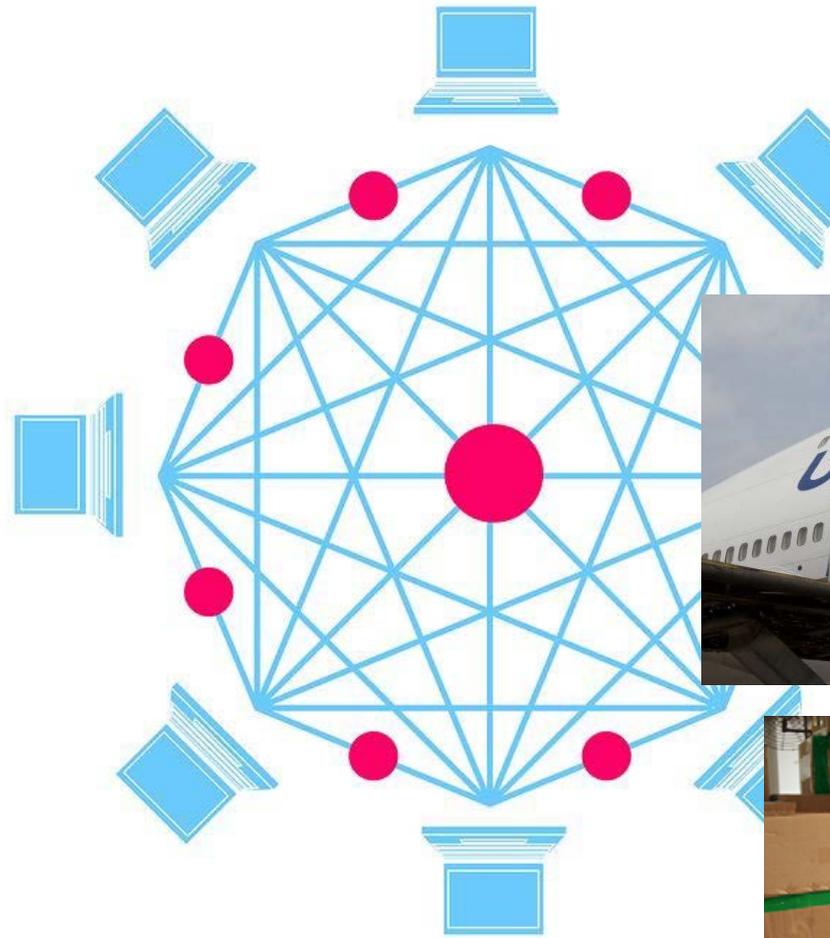
Mode / Carrier

Quantity

Validation

Documents

Effectively Sharing Information



CHEMTREC
You've got OUR number. We've got YOUR back.



United Airlines and DG Auto Check

15 August, 2019

Why Is Automation Necessary?

CHECKLIST APATHY!

- We get this shipment every day, I know it is good
- I've done this for years, I know the regs, its okay.
- It looks good, just like it did last week.
- I'm really busy today, it looks okay

How will this help?

- The program will help facilitate frontline employees to interact with a “smart” checklist.
- It will highlight areas of concern and walk the employee through resolution or refusal
- It will maintain a refusal file



Vision of the Future – short and mid terms

- Reduction of avoidable acceptance errors.
- Tracking and trending of refusals
 - Shift Shopping, repeat offenders, etc.
- Mobile Applications – Tablets
- Easier interface with our customers and partners
 - NH/LH and Service Providers
 - Interlines (Asia Pacific Airlines)



Remote Acceptance – Unique to United

- Central DG Hotline for remote Acceptance
- FAA Approved for over 30 years
- Integration into the operation
- Fits into our technology improvement vision.
- More efficient, dependable and safe



Vision of the Future – Long Term

- Integration with our Stores CoMat Warehouse Management System
 - Uses DGIS application to ship DG
- E-DGD Acceptance Ready
- Data collection and analytics capabilities?

SHIPPER'S DECLARATION FOR DANGEROUS GOODS

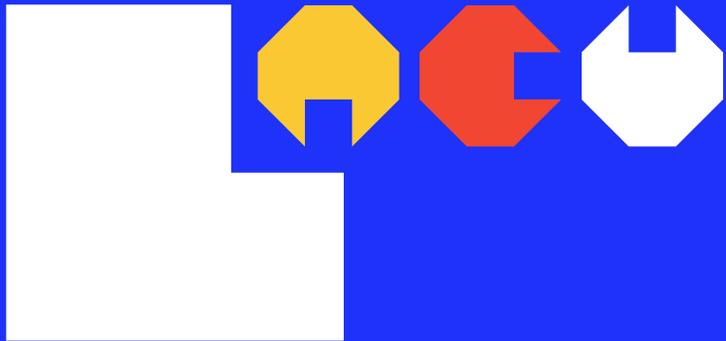
Shipper		Air Waybill No.			
		Page of Pages			
		Shipper's Reference Number (optional)			
Consignee					
Two completed and signed copies of this Declaration must be handed to the operator.					
TRANSPORT DETAILS		WARNING			
This shipment is within the limitations prescribed for: (delete non-applicable)		Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.			
<table border="1"> <tr> <td><input type="checkbox"/> PASSENGER AND CARGO AIRCRAFT</td> <td><input type="checkbox"/> CARGO AIRCRAFT ONLY</td> </tr> </table>		<input type="checkbox"/> PASSENGER AND CARGO AIRCRAFT	<input type="checkbox"/> CARGO AIRCRAFT ONLY	Airport of Departure	
<input type="checkbox"/> PASSENGER AND CARGO AIRCRAFT	<input type="checkbox"/> CARGO AIRCRAFT ONLY				
Airport of Destination:		Shipment type: (delete non-applicable)			
		<input type="checkbox"/> NON-RADIOACTIVE <input type="checkbox"/> RADIOACTIVE			
NATURE AND QUANTITY OF DANGEROUS GOODS					
Dangerous Goods Identification					
Proper Shipping Name	Class or Division	UN or ID No.	Pack-Subst-ing : dary group: Risk		
			Quantity and type of packing		
			Packing Inst.		
			Authorization		
Additional Handling Information					
24 hr. Emergency Contact Tel. No.:		shipment is made under the provisions of ICAO			
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.			Name/Title of Signatory		
			Place and Date		
			Signature (see warning above)		

Road Blocks

- Contracting
- IT resources, cost and prioritization
- Integration with existing systems and IT security
- Licensing for front line users
- Training and US Regulatory Approval



What is IATA
doing to solve
this pain?



IATA Solution

1

Development of
DG AutoCheck

2

Automation of the
documentation
check at
acceptance

3

Promoting
electronic
messaging and
**paperless
supply chain**

Pain Points and Solutions

Safety

Manual checks allow for chance of non-compliant shipments entering the air cargo supply chain

Solution:

- Automation of the DG Acceptance Check Process
- Acceptance Check quality is guaranteed and consistent with the DGR
- Personnel is directed to focus on exceptions such as state or operation variations
- Addendums to the DGR are immediately applied to the checks

Process Improvement

Current manual processes are fragmented and inefficient

Solution:

- DG Checking process significantly accelerated : ~50% less time
- Ability to
 - use electronic and paper formats allow for efficient processes
 - send verified results electronically to internal and external stakeholders
 - manage all check processes and reporting globally within your organization
 - perform analytics on DG operation to better understand problem areas
- Reduced acceptance check times to allow for an overall reduction in shipment handling time

Cost Savings

Manual process is more time consuming and creates safety gaps in prices can lead to heavy fines

Solution:

- Direct cost of DG Checks have the potential to be reduced by 50%
- Improved regulatory compliance and automation will reduce cost of regulatory fines
- Post-processing of check filing, reporting and compliance analysis is significantly reduced

DG AutoCheck

A digital solution that enables airlines, ground handlers and freight forwarders to **automatically check the compliance** of the Shipper's Declaration for Dangerous Goods (DGD) against all relevant provisions of the IATA Dangerous Goods Regulations.

It facilitates as well the verification of the packages' marks and labels on dangerous goods consignments.



Electronic Shipper's Declaration (eDGD)

- The air cargo industry recognized the need for a digital process to manage Dangerous Goods Declaration (DGD) among various stakeholders in the air cargo supply chain
- Changes incorporated in 2009 in the ICAO Technical Instructions enable and support the use of electronic data for DGD
- IATA developed a XML standard (XSDG) to support the electronic DGD (e-DGD)
 - not currently used by the industry
- Part of the digitalization projects driven by the whole air cargo community

SHIPPER'S DECLARATION FOR DANGEROUS GOODS

Shipper ABC Chemicals Route de l'Aéroport 33 CH-1215 Geneva Switzerland		Air Waybill No. 117-12631263 Page 1 of 1 Pages Shipper's Reference Number: Demo				
Consignee CRI Chemicals 418 Central Park West New York, NY 10025 United States						
Two completed and signed copies of this Declaration must be handed to the operator.						
TRANSPORT DETAILS This shipment is within the limitations prescribed for:		Airport of Departure: Geneva				
(delete non-applicable) AIRPORT OF DEPARTURE: <input checked="" type="checkbox"/> AIRCRAFT		Airport of Destination: John F Kennedy				
(delete non-applicable) PASSENGER AND CARBON AMBICRYPT		Shipment type: (delete non-applicable) NON-RADIOACTIVE XXXXXXXXXXXX				
NATURE AND QUANTITY OF DANGEROUS GOODS						
Dangerous Goods Identification						
UN or ID No.	Proper Shipping Name	Class or Division (subsidiary risk)	Packing Group	Quantity and Type of Packing	Packing Inst.	Authorization
UN1669	Pentachloroethane	6.1	II	1 Plywood box x 4 L	654	
UN1263	Paint	3	II	1 Fibreboard box x 6 L	353	
Additional Handling Information						
Emergency contact 24-hr number: +4125051973						
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable International and National Governmental Regulations. I declare that all of the applicable air transport requirements have been met.						Name/Title of Signatory David Brennan
Date and Date 20 Feb 2018						Signature (See warning above)

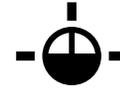
Roles and Responsibilities



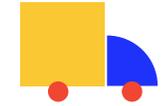
Shipper



Freight Forwarders



Airlines



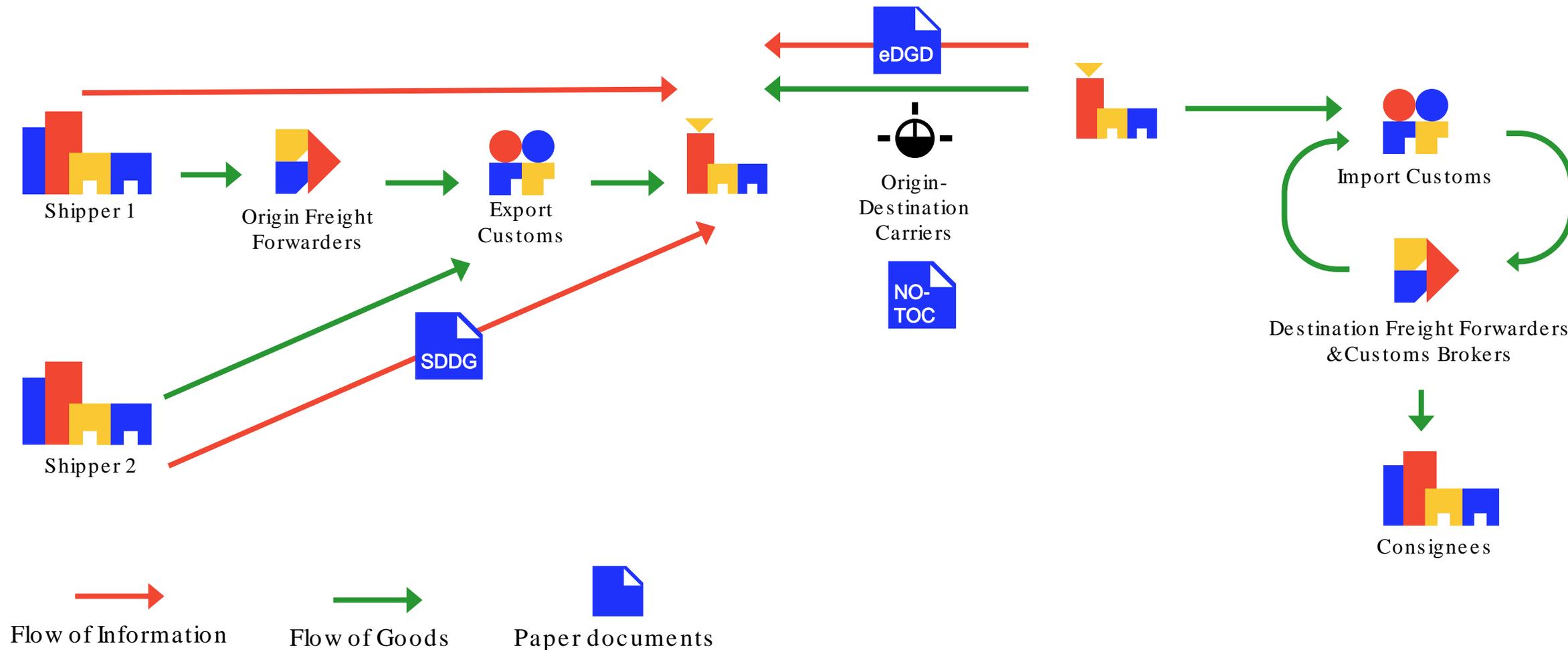
Ground handlers

Make data available to the platform

- Add AWB number
- Decide HAWB/MAWB
- Decide the mode of transport
- Add the origin and destination
- Check the content of data
- Create the checklist and NOTOC
- Store and archive the electronic data
- Print the paper DGD if required (single process)
- Read the e-DGD content
- Perform the acceptance check

The Dangerous Goods Declaration

The Future Business Process



DG AutoCheck Demo



Thank you

