



Contactless Pickup and Delivery Standard

Ensuring efficiency, visibility and safety through technology and collaboration.



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Introduction

Overview

The global COVID-19 pandemic has posed new and unforeseen challenges to supply chains around the world, prompting carriers, shippers, and retailers to adjust processes and implement new protocols to ensure the health and safety of workers while keeping the flow of goods and services moving. This evaluation of processes and how to conduct business has also prompted renewed consideration of how to accelerate technology deployments, collaborate with trading partners, and think outside-the-box to enhance efficiency and ensure on-shelf-availability during a period of unprecedented demand for Consumer Packaged Goods (CPG) products.

The Consumer Brands Association (CBA), Coyote, Accenture, and Vector convened 33 shippers, 19 carriers, and eight retailers, along with representatives from CSCMP and GS1 US, to develop a contactless pickup and delivery standard and to pilot a working technology solution.

The purpose of this document is to provide guidance around the operational standard to help create a software-agnostic and replicable process that uses GS1 Standards for identification. This is still being developed and iterated based on learnings from our pilot deployments.

The Mission

Through collaboration with GS1 US and CSCMP, the mission is to create an industry operational standard that enables shippers, carriers, third-party logistics companies, and retailers to execute contactless freight pickup and delivery workflows.

Establishing an operational standard will allow for interoperability and communication between different companies and technology platforms.

The Pilot Process

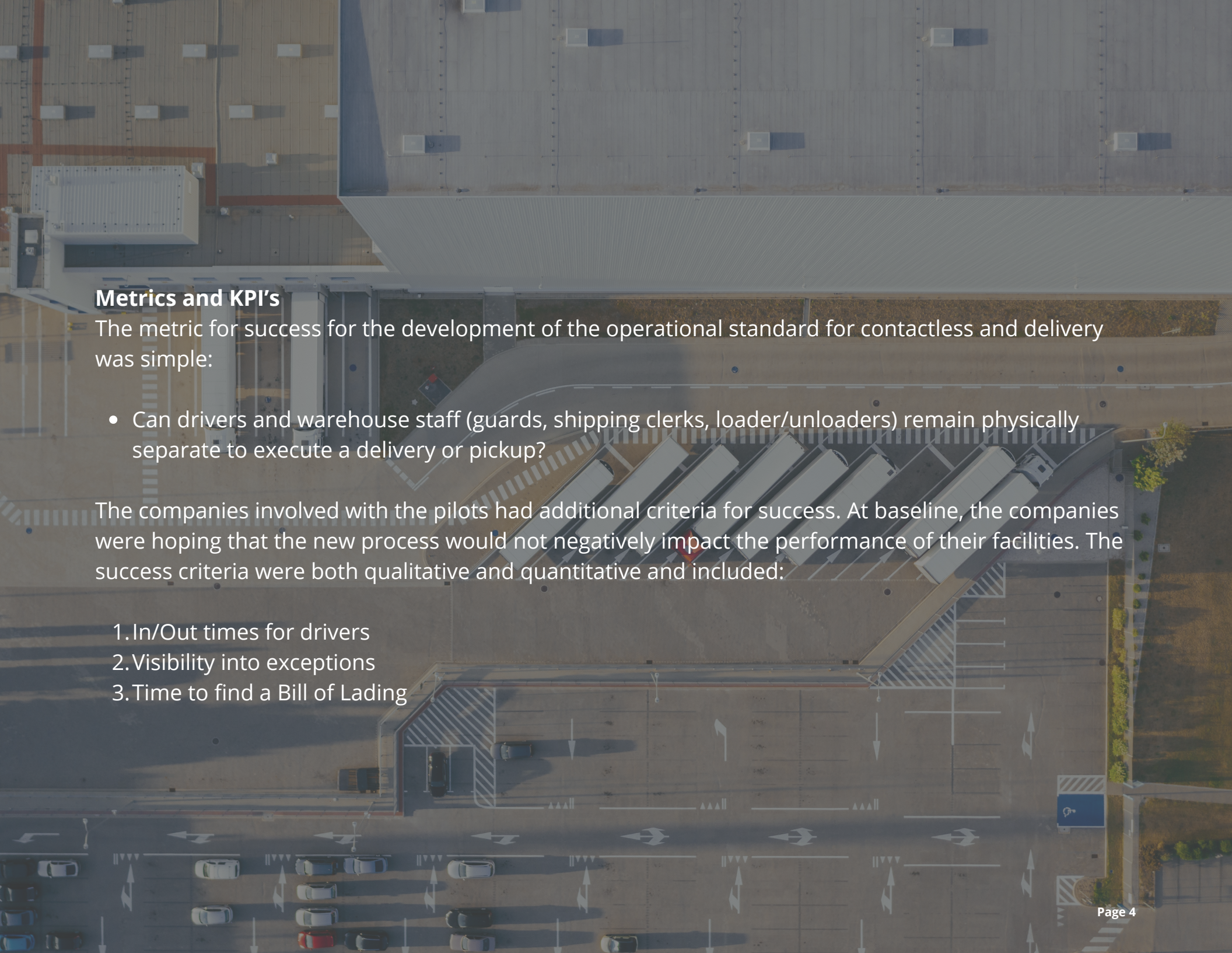
To develop the operational process standard, we deployed 12 pilots across CBA member companies. The pilots were representative of what the solution would look like at scale.

The profile of the companies ranged from shippers to receivers and from companies that had cold chain processes to bulk dry goods. In addition to the shippers and receivers, we deployed our solution to third-party logistics companies and for-hire carriers. We accommodated for intermodal, less-than-truckload, and team driving.

The first step in the pilot process was to document the business processes around pickup and delivery. Each CBA company, carrier, and third-party logistics company were unique in their processes, and we wanted to ensure that a standard could accommodate that uniqueness and would not negatively impact supply chain processes.

After the processes were mapped, we built the digital workflow to conform to those processes while making sure that the data collected from the workflow would adhere to the standards.

We then trained and deployed the solution to the facilities, the third-party logistics companies, and the carriers. We then observed and iterated with the member companies from a four to eight week period. Based on those observations we were able to identify the key data elements that were needed to execute contactless pickup and delivery.



Metrics and KPI's

The metric for success for the development of the operational standard for contactless and delivery was simple:

- Can drivers and warehouse staff (guards, shipping clerks, loader/unloaders) remain physically separate to execute a delivery or pickup?

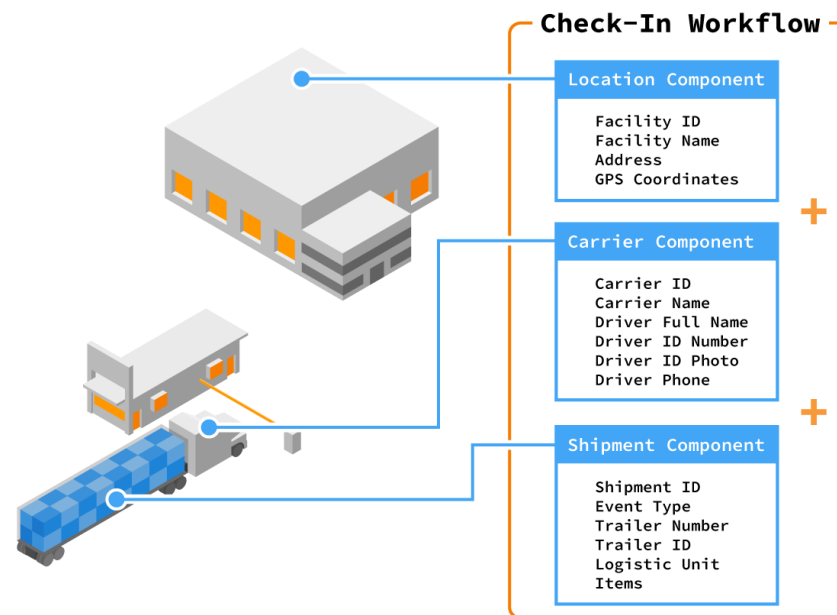
The companies involved with the pilots had additional criteria for success. At baseline, the companies were hoping that the new process would not negatively impact the performance of their facilities. The success criteria were both qualitative and quantitative and included:

1. In/Out times for drivers
2. Visibility into exceptions
3. Time to find a Bill of Lading

What is the Operational Standard?

The operational standard is a set of data requirements for the critical steps of the pickup and delivery process. The operational standard does not prescribe a workflow as each organization and facility is unique in their own processes.

Each workflow is a composition of logical data components. These data components are the building blocks of the workflows and are referenced across multiple workflows.



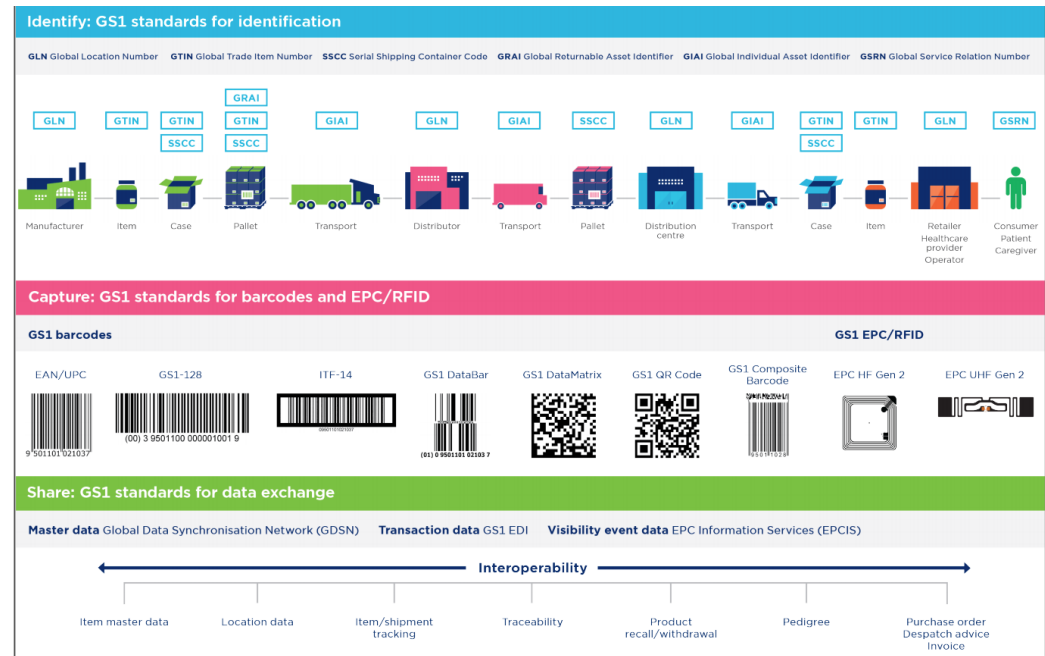
For example, Carrier is part of the Driver Check-In Workflow and the Proof of Shipment Workflow.

The data components are represented by a set of fields that may be required or optional. The fields are GS1 identifiers, Strings, DateTime, etc

Adherence to GS1 Core Principles

The GS1 Standards core principle is built upon these three concepts:

- 1. Identify:** The numbers behind the barcodes are used in both the physical and digital worlds, and GS1 identification numbers uniquely distinguish products, logistics units, locations, assets, documents, and relationships across the supply chain—from the manufacturer to the consumer.
- 2. Capture:** GS1 barcodes can hold data about a product or item, and different barcodes have different purposes depending on where they will be scanned and what types of data they need to hold.
- 3. Share:** GS1 has standards for sharing product and location information electronically, eliminating the need for manual re-keying and improving accuracy and efficiency in business communications.



The operational standard for Contactless Pickup and Delivery uses the GS1 identification keys.

For example, we use the Global Shipment Identification Number (GSIN) to identify the shipment and the Global Location Number (GLN) to identify the location of the facility. We recognize that adoption of GS1 identification keys is varied and so other identifiers can be used, but they may not be interoperable without additional mapping.

It is up to the implementer if they choose to leverage the GS1 capture and share standards. For example, an implementation of the standard can use QR codes to help drivers populate information in the workflow such as a GS1 GLN Facility ID.

Technology

The operational standard for contactless pickup and delivery is a specification of data requirements needed to transact information for pickup or delivery. It is up to the implementation to choose what type of technology can be used to capture the data elements, such as check-in numbers, Bills of Lading, trailer seals, etc. Examples of technology that can be used would be mobile apps, web apps, drones, and kiosks.

There are two choices when it comes to the method of communication - RESTful APIs and EDI. The recommended method of communication to transmit and receive information is via RESTful APIs. It will allow for the greatest flexibility and the best response times. From a business continuity perspective, it would allow trade partners to adopt a solution without impacting existing systems.

The information transmitted does have overlap with existing EDI transaction data sets, such as the 861 and Proof of Delivery. However, there are new types of transactions and additional data to existing transactions (signatures, photographs, etc).

Interoperability Scenarios

There are three relevant interoperability scenarios of using a contactless solution to communicate shipment information such as Bills of Lading or workflow data.

With contactless pickup and delivery, interoperability is a challenge when there needs to be an exchange of information, most notably the Bill of Lading. It is the baton that is handed off between different companies.

An electronic data interchange cannot happen if one side, shipper or receiver, is not using a digital platform to generate or receive Bills of Lading, respectively.

Scenario	Shipper	Receiver
1. Full Contactless	Contactless	Contactless
2. Contactless Receiver	Not Contactless	Contactless
3. Contactless Shipper	Contactless	Not Contactless
4. None	Not Contactless	Not Contactless

We will outline the recommendations for how the interchange can still happen, while allowing the parties that wish to be contactless to remain contactless.

Scenario 2 - Contactless Receiver

The shipper is generating a physical Bill of Lading, but the receiver is using a contactless platform.

Recommendation

The receiver's implementation allows for a driver to digitally scan the Bill of Lading, either by using a mobile device or physical dedicated scanner. The benefit of using a mobile device is that it truly remains contactless for the driver.

The scanned Bill of Lading is encapsulated by the Proof of Delivery Workflow Event. The scanned image has a URL that can be accessed by the receiver platform.

The receiver platform can digitally sign and generate a signature overlay on the Bill of Lading, converting it to a Proof of Delivery. The Proof of Delivery can be retrieved by the driver digitally. The driver has the option to print.

Scenario 3 - Contactless Shipper

The shipper is generating an electronic Bill of Lading but needs to take into account that the receiver downstream is unaware or not accepting digital Bills of Lading.

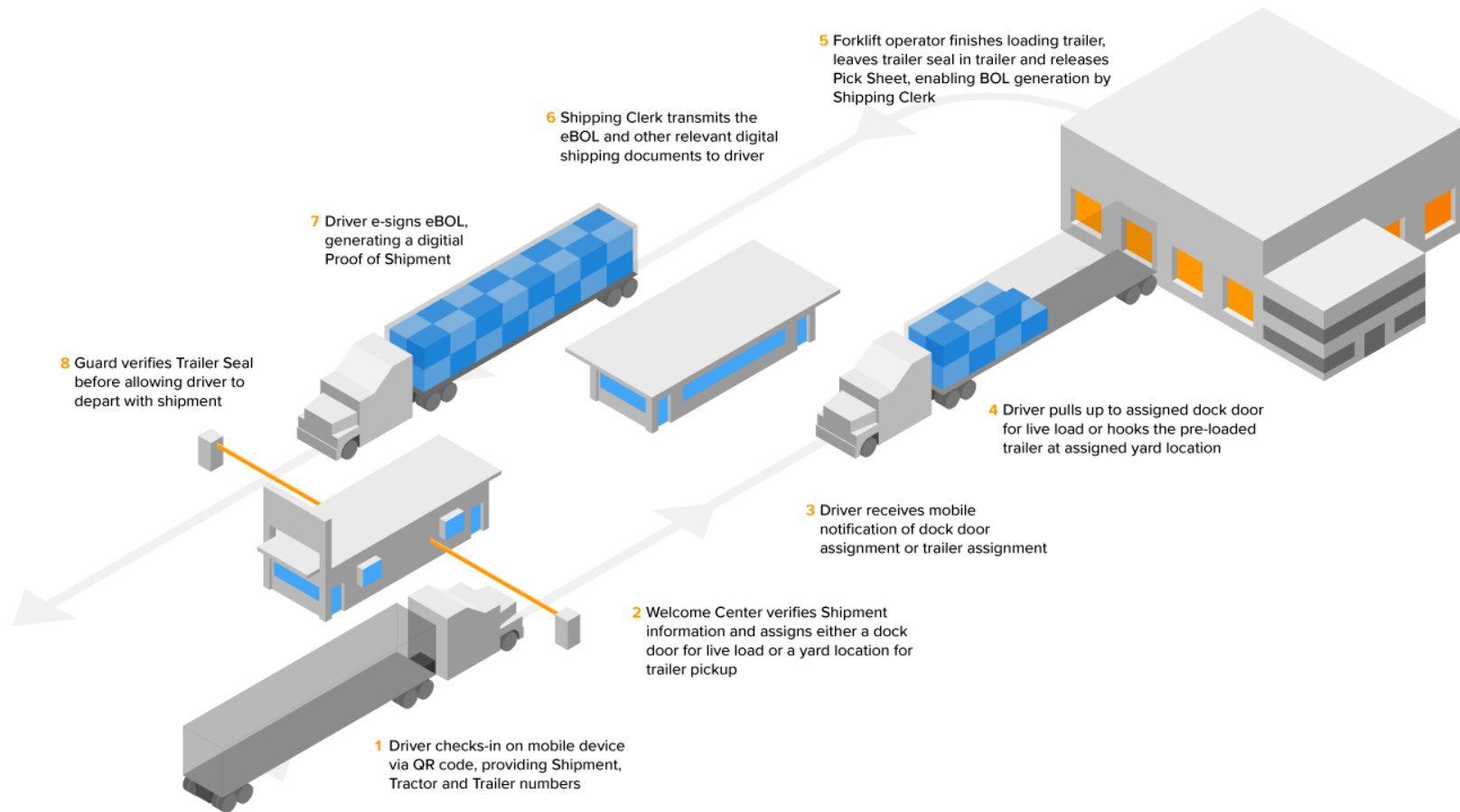
Recommendation

The contactless implementation should allow for a receiver downstream to access a Bill of Lading on a web browser through a unique URL. The receiver can sign the Bill of Lading through an electronic signature.

The backup option is to allow the driver to get a physical Bill of Lading at the shipping facility. We've seen shippers still provide a physical copy on the back of the trailer or set up a kiosk where the driver can print a physical Bill of Lading.

Workflow Events

Contactless Outbound Example



Workflow events represent different stages of the pickup and delivery process. An implementation can have more Workflow Events than the ones outlined here. For the standard, we've reduced it to these core workflow events.

Driver Check In

Name	Component Type	Required?	Description
Check-In ID	UUID	Yes	Automatically generated by the platform
Check-In Location	Location	Required	The location where the check-in is happening. It can be a specific guard shack or the facility
Company	Company	Required	This value may be the same as the Check-In Location
Shipment Information	List of Shipment(s)	Optional	The list can be empty if the driver is returning an empty trailer
Carrier	Carrier	Required	The carrier that is checking into the facility
Check In Status	String	Required	E.g. waiting for door assignment, door assigned, etc
Appointment	Appointment	Required	The appointment information that is the YMS or WMS
Timestamp	Event Timestamp	Required	Date/Time of when the information was submitted and received

Driver Check In Response

Name	Component Type	Required?	Description
Response ID	UUID	Yes	Automatically generated by the platform
Instructions	Instruction List	Required	These are the instructions for the driver after they have checked in. For example, "pull into door 12"
Timestamp	EventTimestamp	Required	Date/Time of when the information was submitted and received

Proof of Shipment

Name	Component Type	Required?	Description
Proof-of-Shipment ID	UUID	Yes	Automatically generated by the platform
Shipper	Company	Yes	The shipper that is generating the BOL
Carrier	Carrier	Yes	-
Bill of Lading	Document	Required	-
Driver Signature	Electronic Signature	Required	-
Shipper Signature	Electronic Signature	Required	-
Outbound Trailer Seal	Trailer Seal	Optional	Present, if this shipment was moved on a trailer and had a trailer seal requirement

Proof of Delivery

Name	Component Type	Required?	Description
Proof-of-Delivery ID	UUID	Yes	Automatically generated by the platform
Bill of Lading	Document	Required	The document
Consignee	Company	Required	-
Carrier	Carrier	Required	-
Consignee Signature	Electronic Signature	Required	-
Driver Signature	Electronic Signature	Required	-
Inbound Trailer Seal	Trailer Seal	Optional	Present, if this shipment was moved on a trailer and had a trailer seal requirement

Name	Component Type	Required?	Description
Overage/ Shortage/ Damage	DeliveryException	Optional	If there was any damage, shortage, or overage, this contains the information and pictures associated with that exception
Subject to Case Count	Boolean	Optional	For Drop/Hook operations, the delivery is subject to case count and the POD is generated later

Data Components

Appointment

Name	Component Type	Required?	Description
Appointment Number	Text	Required	-
Appointment Time	DateTime	Optional	-
Status	String	Optional	Scheduled/Arrived/Failed to Arrive

Location

Name	Component Type	Required?	Description
Facility ID	Global Location Number or String	Required	-
Facility Name	String	Optional	-
Address	String	Optional	-
GPS Coordinate	Coordinates	Optional	Latitude/longitude coordinates. This may be necessary for locations that don't have a physical address

Shipment

Name	Component Type	Required?	Description
Shipment ID	List of Strings, including GSIN if available, otherwise String	Required	f GSIN is not available, then a unique identifier for that shipment e.g. PO Number or Load Number
Type	String	Required	Pickup, Delivery
Trailer Number	String	Optional	-
Trailer ID	Global Individual Asset Identifier	Optional	-
Logistic Unit	List of SSCC (Serial Shipping Container Code)	Optional	E.g. the list of SSCC pallet labels
Items	List of GTIN (Global Trade Item Number)	Optional	E.g. the list of GTINs numbers for items in the trailer

Trailer Seal

Name	Component Type	Required?	Description
Seal Number	String	Required	-
Photo	Photograph	Optional	Photograph of the seal affixed on the trailer. For pickups, after trailer is loaded. For deliveries, before the seal is cut
Is Verified	Boolean	Required	True, if the seal matches the seal # on the Bill of Lading. False, otherwise

Carrier

Name	Component Type	Required?	Description
Carrier ID	String	Required	e.g. SCAC, DOT #, MC #
Carrier Name	String	Required	-
Driver Full Name	String	Optional	-
Driver ID	String	Optional	-
Driver Phone	String	Optional	-
Driver License Photo	Photograph	Optional	-
Tractor Number	String	Optional	-

Company

Name	Component Type	Required?	Description
Company ID	Global Location Number or String	Required if available	-
Company Name	String	Required	-

Instructions

Name	Component Type	Required?	Description
Instruction ID	Universally Unique ID	Required	Automatically generated by the platform
Instruction	String	Required	E.g. "Pull up to Dock 12"

Temperature Requirement

Name	Component Type	Required?	Description
Required Temperature	String	Required	-
Captured Temperature	String	Required	Temperature of the trailer on pickup/delivery
Temperature Photo	Photograph	Optional	Photograph of the temperature reading
Timestamp	Event Timestamp	Required	-

Event Timestamp

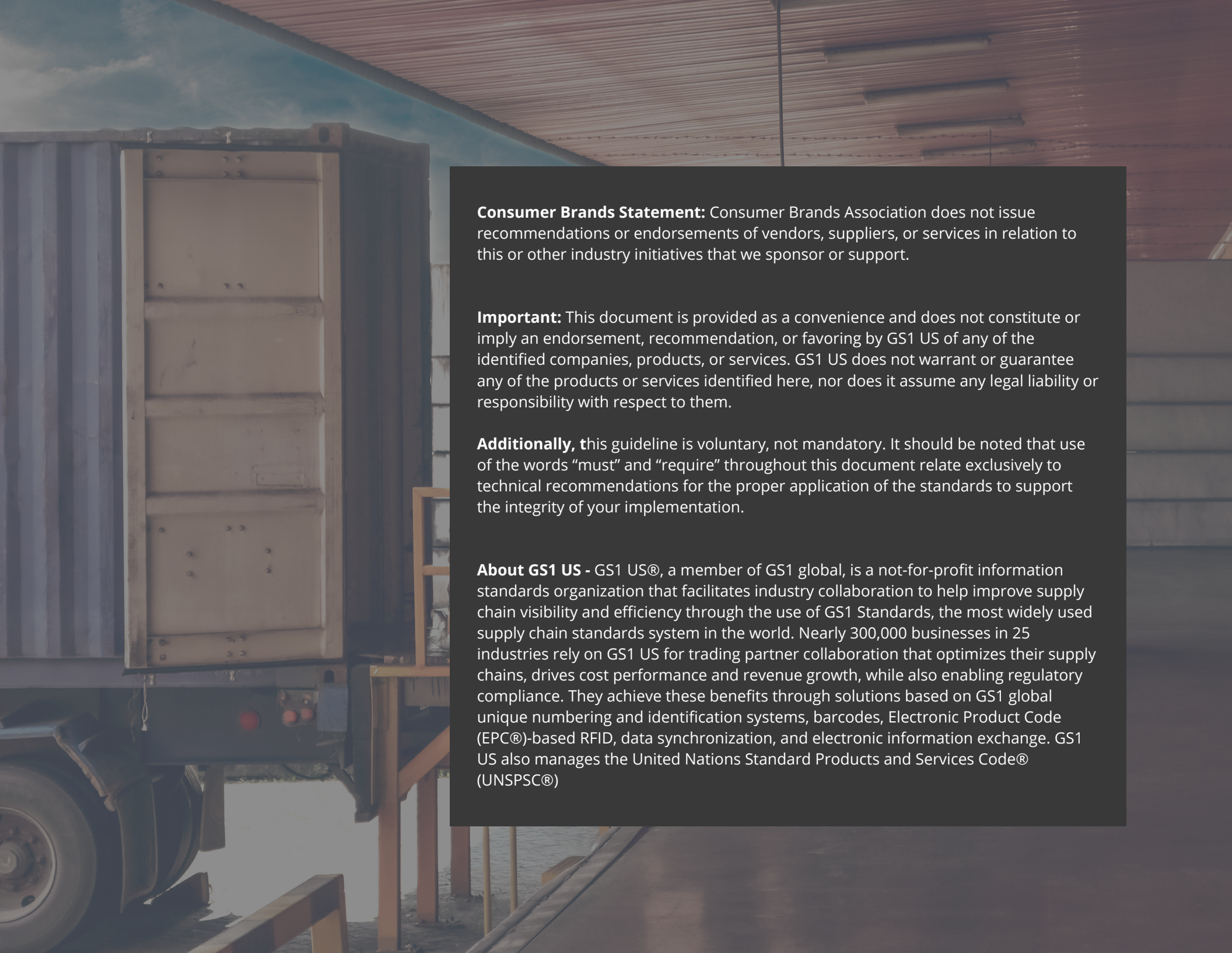
Name	Component Type	Required?	Description
Time Submitted	DateTime	Yes	Date and time when the event was submitted to the platform
Time Received	DateTime	Yes	Date and time when the event was received by the platform

Document

Name	Component Type	Required?	Description
Document ID	Global Individual Asset Identifier or String	Yes	Automatically generated by the platform
Document Name	String	Yes	Name of the document
Document URL	URL	Yes	URL of document image(s); can be PDF, PNG, JPEG or TIFF formats

Delivery Exception

Name	Component Type	Required?	Description
ExceptionType	String	Yes	Overage/Shortage/Damage/Other
Description	String	Yes	E.g. "Load shift caused damage to four pallets"
Photos	String	No	-
Timestamp	Event Timestamp	Yes	-



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