Getting Started with Status Management in iD Cloud

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2. Introduction

The Status Management feature introduces functionalities to mark items as 'special'. For example, to denote that an item is faulty, displayed on a mannequin, or currently being lent to a third-party. These special states help the retailer to decide what is currently directly for sale (or not) so that (digital) product availability can be optimized and sales maximized.

This Getting Started-guide helps to deploy and configure Status Management for an organization.

> ℹ️ **Using Status Management within an ERP-based organization**
> For retailers that do their RFID Count against an ERP file, please note that Status Management can be used, but will have limits.
> - Inside the RFID Count feature in the app, the app cannot filter on statuses. All EPCs will be observed and shown within the progress in the app.
> - By default the Difference List includes items with the status `sellable_accessible` and `sellable_not_accessible`. This does not by default include other statuses, but these can be included in the Difference List via a managed setting. This can prevent any discrepancies between ERP expectations and sellable RFID stock. Please note that the export of the Difference List will not show which items have a certain status, this will remain a combined total of all statuses.
>
> On our development roadmap new developments can be found that will make using Status Management within an ERP-based organization easier.

3. Basic Concepts

To kick-start knowledge about Status Management, we start with introducing the concepts behind status management.

3.1 RFID Count versus RFID Stock

In iD Cloud, we make a distinction between an RFID Count and RFID Stock.

- **RFID Count** is an event wherein all items in the stores are observed, to get a list of Electronic Product Codes (EPCs) which are physically present in the store. This information is used to update the RFID Stock.
- **RFID Stock** is a list of EPCs that is currently assigned to a certain store. This list is updated in realtime by any RFID process in the store, like count, receiving, selling, etc.

3.2 Disposition, status and GS1 standards

Every item (i.e. EPC) has a certain state. The GS1 standards do not use of the term 'status', but use the term 'disposition'. The technical term 'disposition' is used in the backend of the iD Cloud platform. The disposition is listed for every item.

- The disposition is listed when you look up the events of an EPC (EPCIS repository in iD Cloud Web). It shows you the changes of the disposition of that item over time on a certain location.
- The current (i.e. latest) disposition for every EPC is given when you retrieve the RFID Stock.

At all times an item will have a disposition. A business process can influence a disposition. For example, once an item is moved from the sales floor to the back-of-house, the disposition is changed from `sellable_accessible` to `sellable_not_accessible`.

Besides dispositions, the iD Cloud platform distinguishes 'persistent dispositions'. These dispositions are less sensitive to change – that means that not every business process can change the disposition if the disposition is persistent. In our apps we will not use the technical term 'persistent disposition' but use the wording 'status' here.

> ℹ️ Please note that the concept '*persistent disposition*' is currently a Nedap Retail concept. Since Nedap Retail is collaborating in GS1 work groups to define the standard, we take an active role in discussing these ideas. The persistent disposition concept is expected to be part of the official EPCIS 2.0 standard.

3.3 Stock accuracy versus item persistency

If an item has a persistent disposition (i.e. status), this disposition will not be changed by the Count, Move or Ship processes.

By default, a full store count acts as a 'reset' for the complete RFID Stock. If a certain item was expected to be sold – but in fact still located on the sales floor – an RFID Count would ensure that this item is made present again in RFID Stock. If an item was stolen, the RFID Count would make it possible to correct that in the ERP stock to properly replenish goods. In other words, RFID Count will correct for process mistakes and correct these mistakes automatically.

The concept of status does not correct for process mistakes automatically. If an item has the status 'on display', while the item is removed from the mannequin and put back on the sales floor, a count will not correct for this process mistake (since it is not capable of detecting this location change). Because the 'on display'-status is persistent, the count will not affect the item state. This leads to inaccuracies in the stock – and requires management of statuses.

In iD Cloud Web, a list of items with a status can be found. This list shows 1) how long a status is applied to an item and 2) when this item has been observed for the last time by RFID. This helps staff to release the status in case it does no longer apply to that item.

> ℹ️ **Persistency and shipping**
> Since statuses are also persistent to the Shipping process, the status of an item is maintained – even if an item is shipped from one location to another.

3.4 Business logic of processes

How a (persistent) disposition of an item will be updated by an RFID Count depends on three attributes:

1. whether the disposition of the item is persistent
2. whether the item itself is physically expected in store
3. whether the item is observed by RFID during the count

For example, a certain item is lend to a third-party. This item is still allocated to the store stock, but it is no longer physically present in the store. This item is therefore not expected to be counted and will not be part of the store count. However, it might be counted in case the item has been recently returned by the third-party. For all these events, the disposition of the item will remain 'lend'. The Manage Status page in iD Cloud Web will show that a lend item has been observed again in the store – and if forgotten to be returned – help decide that its status might not be up-to-date.

1. Whether a disposition is persistent, is defined by iD Cloud. This can not be configured.
2. For which *processes* the disposition is persistent *to*, is defined by iD Cloud. This can not be configured.
3. Whether items with a certain status are expected to be physically in store can be configured via a setting. This setting can be configured on organization-level. Please note that this setting is only relevant if RFID Stock is used as the expected stock for counts. In other words, this setting is only relevant in case of realtime RFID. See the chapter Expected stock for Assisted Counting.

3.5 Stock views

Based on status, a particular 'view' on stock can be retrieved from RFID Stock. For example, to get all store stock that can be made available online, one could pick all stock in the stockroom excluding faulty-, held- and reserved-items. This makes it possible to create different stock views, optimized for its purpose. Here a couple of examples are listed:

Stock view example	Status filter set
Financial stock	E.g. all stock, except held-status items (i.e. 'click&collect').
Online stock	E.g. stock in stockroom, except faulty-, held-, reserved-status items.
Physical store stock	E.g. all stock, except lend-, in-transit-status items.

4. Configure status

4.1 List of assignable statuses

At the moment we support this lists of statuses. These statuses are persistent for Count, Move and Ship processes.

Status process	Status	Description	Applications
Displaying	On display	Item is part of a visual merchandise display. Typically these items are not directly accessible for customers.	• Items on mannequin • Items in a vitrine
	In showcase	Item is presented in a showcase.	• Items in a showcase
Lending	Lent	Item is lent to a customer. Typically these items are not always physically expected in store.	• Items lent for marketing purposes • Items lent to store staff
Inspecting	Damaged	Item is damaged.	• Items that are damaged
	Missing article	Item is missing.	• Items that are missing
	Faulty**	Item is faulty.	• Items that miss some subparts
Customizing	Customized	Item is customized for a customer.	• Items that are tailored • Items that are customized
	Hemming	Item is part of hemming process.	• Items that are being hemmed
Selling	Online sold	Item is sold online to a customer.	• Items that were sold online
Retail reserving	Reserved	Item is temporarily reserved for a customer. Typically these items are not yet sold to the customer.	• Items that are requested via another store for a customer • Items that are reserved for a customer via an e-commerce platform
	Reserved for Peak	Items is marked as reserved for peak days.	• Additional stock reserved for Peak Season (like Black Friday)

Status process	Status	Description	Applications
Holding	Held	Item is held for a customer and awaiting pickup. Typically these items are already sold to the customer.	• Items that will be picked up from store. • Items that will be shipped from store (BOSS)
	Received order	Item is part of a received order. The order is awaiting pickup by customer.	• Items that are part of a received order (Click & Collect / BOPIS)

> ℹ (**) The previously known status '**Faulty**' is changed to '**Damaged**' in Assign Status. This terminology change applies to Manage Status in iD Cloud Web as well from 2 February onwards.

4.2 List of statuses

Please note that the app will also show other dispositions, such as

- 'sold' (in case of a sold item) and
- 'in transit' (in case of an item in a shipment).

These statuses are however not assignable within the app. Only assignable statuses will be listed in Manage Status in iD Cloud Web. Here, an overview of processes and statuses can be found:

Process / biz_step	Status / disposition	Assignable in app	Persistent for processes
Displaying	On display	Yes	Count, Move, Ship
Displaying	In showcase	Yes	Count, Move, Ship
Lending	Lent	Yes	Count, Move, Ship
Inspecting	Damaged	Yes	Count, Move, Ship
Inspecting	Missing article	Yes	Count, Move, Ship
Inspecting	Faulty	Yes	Count, Move, Ship
Customizing	Customized	Yes	Count, Move, Ship
Customizing	Hemming	Yes	Count, Move, Ship
Retail reserving	Reserved	Yes	Count, Move, Ship
Retail reserving	Reserved for peak	Yes	Count, Move, Ship
Holding	Held	Yes	Count, Move, Ship
Holding	Received order	Yes	Count, Move, Ship
Shipping	In transit	No	Count, Move
Shipping	Ready to ship	No	Count, Move
Shipping	In progress	No	Count, Move
Receiving	Ready to unpack	No	Count

Process / biz_step	Status / disposition	Assignable in app	Persistent for processes
Selling	Sold	No	Count, Move, Ship
Selling	Online Sold	Yes	Count, Move, Ship
Killing	Destroyed	No	Count, Move, Ship
Other	Unknown	No	No
Cycle counting	No status (sellable)	-	-
Stocking (Move)	No status (sellable)	-	-
Storing (Move)	No status (sellable)	-	-
Storing	Arrived	No	Count, Move

ⓘ **Exclude status**

Besides these statuses, the iD Cloud platform supports an 'excluded'-status. This status can be set to an item via the EPCIS API by defining an object-event with disposition `http://nedapretail.com/disp/excluded` .

If an RFID label has the excluded-status assigned, this will be shown in the yellow status bar in Identify. This status is persistent for Count and Ship. That means that the status is not removed if the item is part of a shipment or part of a count. If the item is moved from one location to another within Move in the app, the excluded-status is removed.

In contrast to the statuses listed above, an item with the excluded-status will be filtered out from a count at the time a count is finished. That makes it possible to exclude certain items from the export to ERP – already with the current count-based Difference List. Since items are removed from an RFID count, traceability is very limited and therefore the use of the excluded-status is discouraged.

4.3 Point–of–sale (POS) integration

If you would like to assign the status via the point-of-sale (POS), you can make use of Transaction APIs to set to the status to an item. On our developer portal all relevant Transaction API endpoints can be found.

4.4 Assign status in the iD Cloud app

Besides a point-of-sale integration, it is possible to assign and release statuses from within the app. Which statuses can be assigned or released from the app, can be configured via a managed setting by our support desk: `idcloud.app.assignable_statuses` . Please note that only 'assignable statuses' can be configured via this setting. See List of assignable statuses for more information.

This feature is usable in case status information is displayed in the app. To show status information in the app, this feature should be turned on by our support desk: `idcloud.app.functionality.identify.show_epc_status`.

4.5 Expected stock for Assisted Counting

In case iD Cloud is configured as realtime, the expected stock for counts will be based on RFID Stock (instead of ERP Stock). In that case, configuration is needed to determine which dispositions are expected to be physically present in the store. This can be defined via a managed setting by our support desk: `idcloud.realtime.default_dispositions_to_count`.

> ⓘ Please note: this setting can also be used to determine which statuses need to be included in the Difference List when iD Cloud is not configured as realtime.

5. Exporting stock

5.1 RFID Stock API

Statuses are assigned to items in the store. To export a certain stock view, the RFID Stock API can be used. This API returns a list of GTIN-quantities (or a list of EPCs) that represents the RFID Stock of the store. This response can be filtered on certain dispositions, to only retrieve the financial stock of a store for example. See Stock views and the developer portal for more information.

5.2 (Approved) Difference List API

A lot of retailers make use of the Difference List to approve and export their stock to an ERP system. At the moment, this Difference List compares a RFID Count with an uploaded ERP Stock file and returns the differences to the ERP system, once approved. Since RFID Counts do not have a notion of status, this feature can not be used to filter the outcome on certain statuses.

By default the current Difference List includes items with the status `sellable_accessible` and `sellable_not_accessible`. This does not by default include other statuses, but these can be included in the Difference List via a managed setting. This can prevent any discrepancies between ERP expectations and sellable RFID stock. Please note that the export of the Difference List will not show which items have a certain status, this will remain a combined total of all statuses.