

An Informatic Solution for Seamless Ordering of Externalized Sample Collections

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Introduction

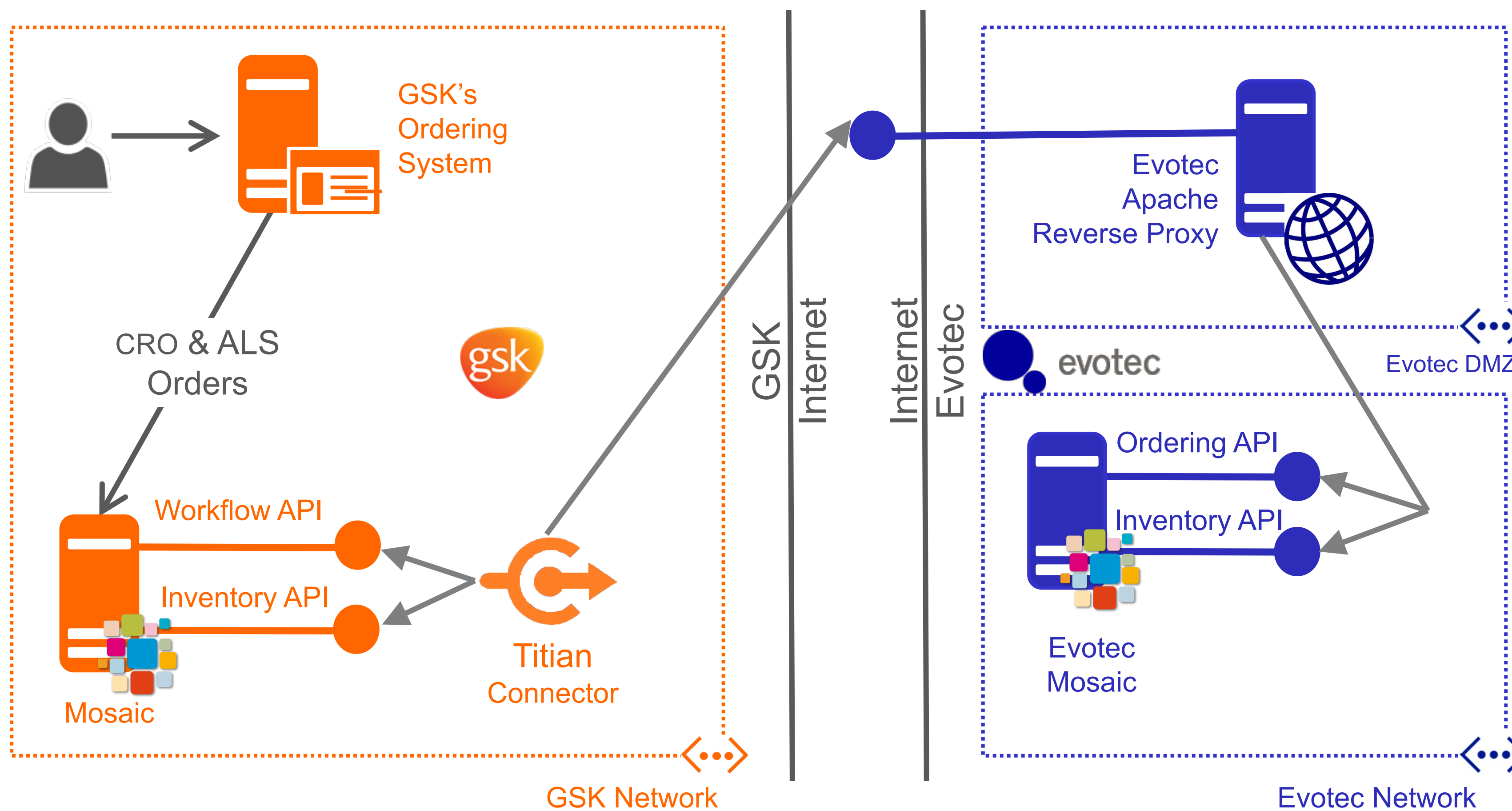
With the externalization of Sample Management, there is an increasing need for better connection between the scientists at the Company preparing, sending and requesting samples and the Contract Research Organization (CRO) receiving and storing these samples and fulfilling requests for them.

Recently GSK (GlaxoSmithKline) decided to externalize their Neat inventory to Evotec. Both companies currently use Titian's Mosaic software platform for their internal sample management, and GSK decided to work with Titian to implement a direct Mosaic-to-Mosaic Connector.

This Connector allows the GSK requestors to place an order into their system and for Evotec to fulfil the order, while maintaining security of the connection and segregation from other customer's collections managed by Evotec.

Mosaic-to-Mosaic Connector and Ordering Process

The diagram below shows how the Mosaic-to-Mosaic Connector component interacts with GSK's Mosaic system and Evotec's Mosaic system for inventory tracking and sample ordering.



Processes Managed by the Connector

Submission of new orders to Evotec, and tracking of these orders

- 1) A GSK requestor submits an order for compounds located "At Evotec"

Order 1361	
Status	Streams
Summary	
0	Source Store (No Container): Store, Add to Logical Group: False, Export to ABase: False
1	Drx_dispense (Despatch in Bag): 1x Deliver: Hooker, Alan (alan.hooker), 2 mg, T-vial
2	Drx_dispense (Despatch in Bag): 1x Deliver: Sheron, Ben (ben.sheron), 2 - 3 mg, 4ml screw cap, (No set)

Order in GSK's Mosaic

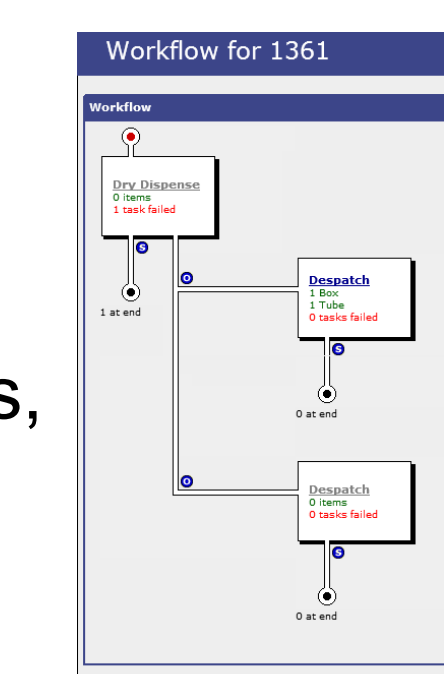
- 2) The Connector polls GSK's Mosaic system for Orders tagged for Evotec fulfilment and then creates the corresponding order at Evotec using the Mosaic Ordering API

Order 28793 (1361)	
Status	Streams
Order	
Order Type:	From Neat vials (By Barcode)
Order Template:	GSK (By Dispense Unit)
Requester:	User (GSK), Connector (ConnectorUser@GSK)
Created:	03/01/2017
Priority:	Low
Start Date:	03/01/2017
Due Date:	03/01/2017
External Order:	GSK1361
Comment:	
Order Status	
Order Status:	Accepted
Last Check:	03/01/2017 15:19:59
Line Items	
OK:	1
Total:	1

Order in Evotec's Mosaic

- 3) The Evotec operators then fulfil these new orders as directed

- 4) The Connector polls for updates on the submitted Evotec orders. And for each order with results, the Connector reads the information and updates GSK's Mosaic inventory accordingly (register the new outputs, decrement the sources, etc.). It also updates the corresponding GSK Mosaic order



- 5) The output containers are shipped to the appropriate GSK site. Upon receipt at the site, the operator acknowledges receipt by fulfilling the despatch of the outputs to the specific recipient

Key Requirements

Inventory tracking

- Ability to track samples from their registration in GSK's system to their receipt and storage at Evotec
- Automatic creation of the inventory in Evotec's Mosaic system using information from GSK's Mosaic system (no file transfer)
- Tracking of inventory updates as orders are fulfilled

Internal order for external fulfilment

- Ability to create an order in GSK's system and have it routed automatically to Evotec for fulfilment
- Ability for GSK requestors to check the status of their orders being fulfilled at Evotec

Inventory segregation

- Ensure that the Connector queries and places orders only against GSK's inventory at Evotec and does not have access to other customers' labware items

Secure connection and access

- Requirement to authenticate all incoming connections to the Evotec's system
- No calls are made from the Evotec side into GSK's system, to minimise and focus on the IT infrastructure requirements

Processes Managed by the Connector

Submission of new containers to Evotec

- 1) The operator at GSK creates the containers in Mosaic, e.g. via file import or Inventory API. These containers are placed in a "Pending Shipment to Evotec" location

Tube AH0301GSKF01	
Details	Sample
Barcode: AH0301GSKF01	Substance Type: Small Molecule
Labware Type: 10.5ml screw cap	Material ID: 00000000000000000000
Creation Date: 03/01/2017 14:51:15	Registration No: 124655
Expiry Date:	Material ID:
Last Picked Date: 03/01/2017 14:59:13	Amount: 20 mg (Measured)
Thaw Count: 2	Available Amount: 20 mg (Measured)
Comment: KH test	Total Thaw Count: 3
Set Folder: US&External Compounds	Granularity (neat): Unclassified
Set Name: Drx Compounds at Evotec	Accessibility: Accessible Through Substitution
Gross Weight: 1022 mg (Calculated)	Ignore: No
Net Weight: 1002 mg (Estimated)	Initial Amount: 10 mg (Measured)
Requires Secure Storage: No	
Despatched: No	
Location	
Location Path: GSK/US&Evotec/Pending shipment to Evotec	

Newly created Inventory, displayed in GSK's Mosaic web interface

- 2) The Connector polls the "Pending Shipment to Evotec" location in GSK's Mosaic system. When it finds a container at that location, it automatically creates it in Evotec's Mosaic system at an "In Transit" location

- 3) Meanwhile the container is physically shipped to Evotec. Once received at Evotec, the Evotec operator updates the location of the containers to their actual location

Tube AH0301GSKF01	
Details	Sample
Barcode: AH0301GSKF01	Substance Type: Compound
Labware Type: GSK_Val_10.5ml	Customer: GSK-AAAAAAAAAAAAAAAAAB01
Creation Date: 03/01/2017 14:51:15	Amount: 20 mg (Measured)
Expiry Date:	Available Amount: 20 mg (Measured)
Thaw Count: 2	Total Thaw Count: 3
Comment: KH test	Granularity (neat):
Set Folder: US&External Compounds	Accessibility: Directly Accessible
Set Name: Drx Compounds at Evotec	Ignore: No
Gross Weight: 1022 mg (Estimated)	Initial Amount:
Net Weight: 1002 mg (Estimated)	
Requires Secure Storage: No	
Despatched: No	
Location	
Location Path: US&A	

Inventory received at Evotec, displayed in Evotec's Mosaic web interface

- 4) Finally, the Connector updates the location of the items in GSK Mosaic system to "At Evotec"

