D2Middleware App

A great example of DHIS2 Interoperability

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Major functionalities of the interoperability

- Creates interoperability between Human Resource Management and DHIS2
- Supports single source and multiple destinations (S: HRIS, des: Central & Community ser.)
- Supports interoperability between Multiple DHIS2(DHIS2 as Source & Destination)
- Automatic and manual mode message exchanges, *here messages are org unit info*
- Org unit review, approve, delete and update by Facility Registry Interoperability App
- Can preview org unit location, compare updated facilities and assign datasets
- Notification center(SMS, Email, Message exchange summary)
- Supports Queuing, Publisher acknowledgement & Translator Elements Mapping
- Multiple cron job setup and run according to the settings

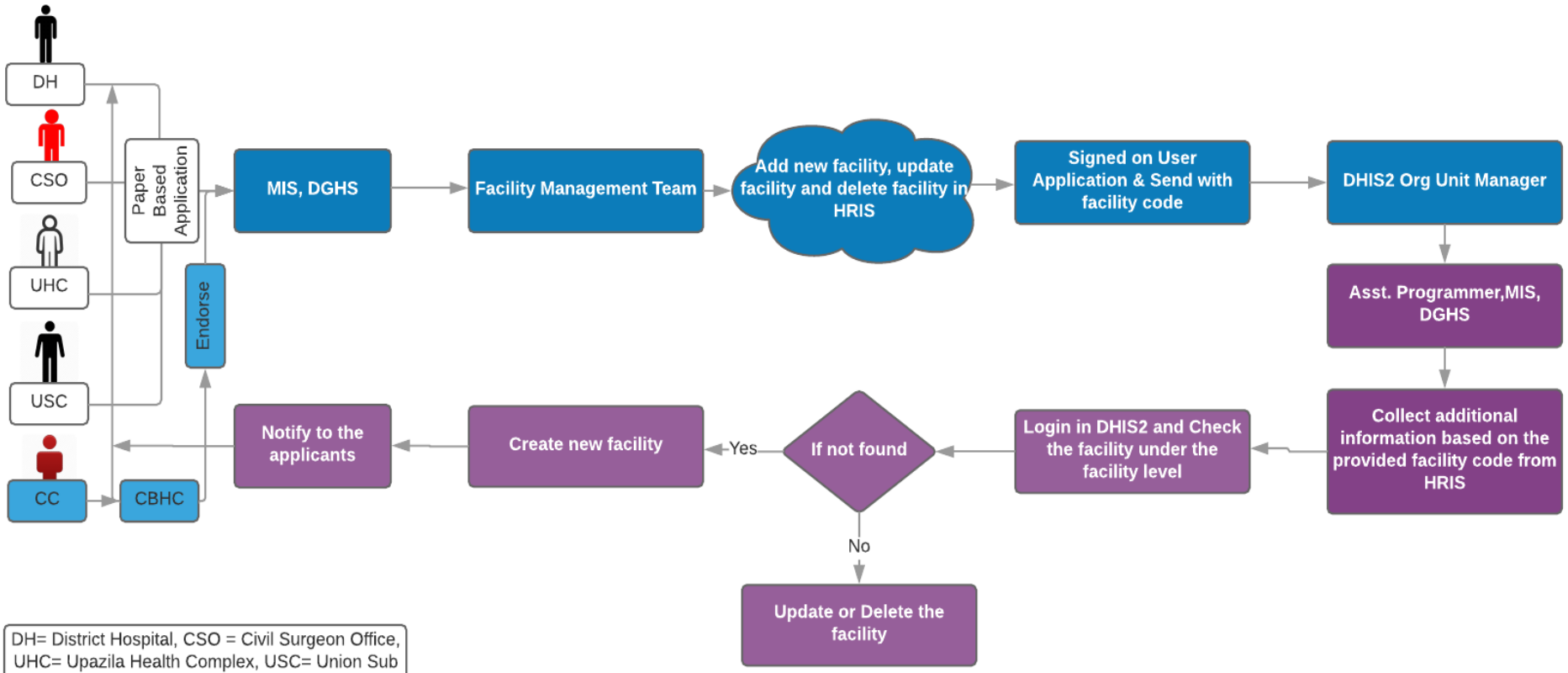
Major functionalities of the interoperability

- Creates interoperability between community and central server (Bangladesh)
- Users and org units synchronization between two servers in manual process
- Org Units informaiton extract for any external interoperability with DHIS2
- Automatic Org Unit sync between DHIS2 community and central server
- Automatic new users information sync between community and central server
- Users Role Monitor and Access the users info in a particular role
- Rabbit MQ integration and Testing with real server

Direct benefits from the apps

- Minimizing the work load of different level managers
- Improving the quality and accuracy of metadata utilization
- Great impacts on providing facilities service to the patients
- Stop duplicate facilities in DHIS2
- Cross checking opportunity for the managers before approval in DHIS2
- Decreases errors like facility name, code, lat, lng and other general information
- Helps the MOHFW to foster efficiency, data transparency, utilization, and accountability
- Creating a stronger digital health system in Bangladesh

Org. unit management current practice in Bangladesh



DH= District Hospital, CSO = Civil Surgeon Office, UHC= Upazila Health Complex, USC= Union Sub Center, CC= Community Clinic, CBHC= Community Based Health Care

Figure: MIS, DGHS facility management work flow

Org unit management work flow between HRIS and DHIS2

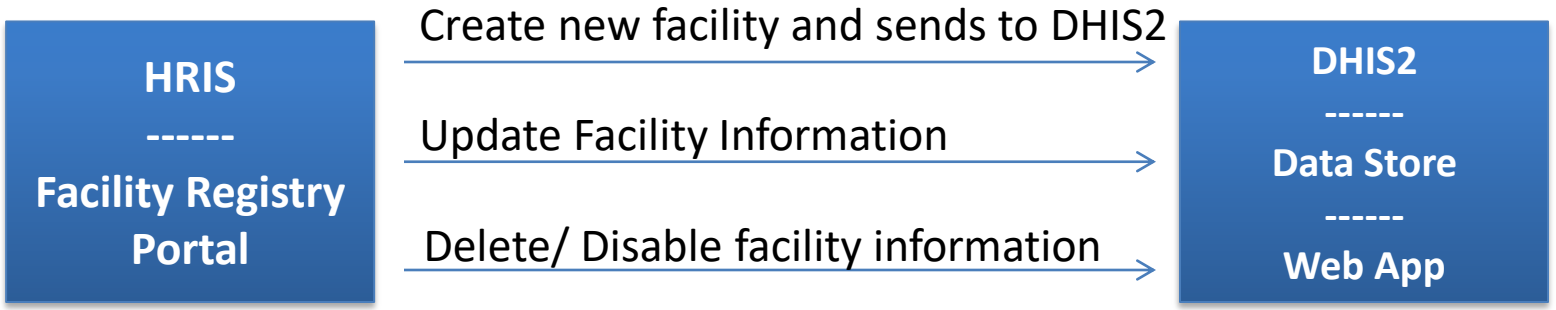


Figure: DHIS2 and HRIS Interoperability High Level Architecture

Single source and multiple destinations

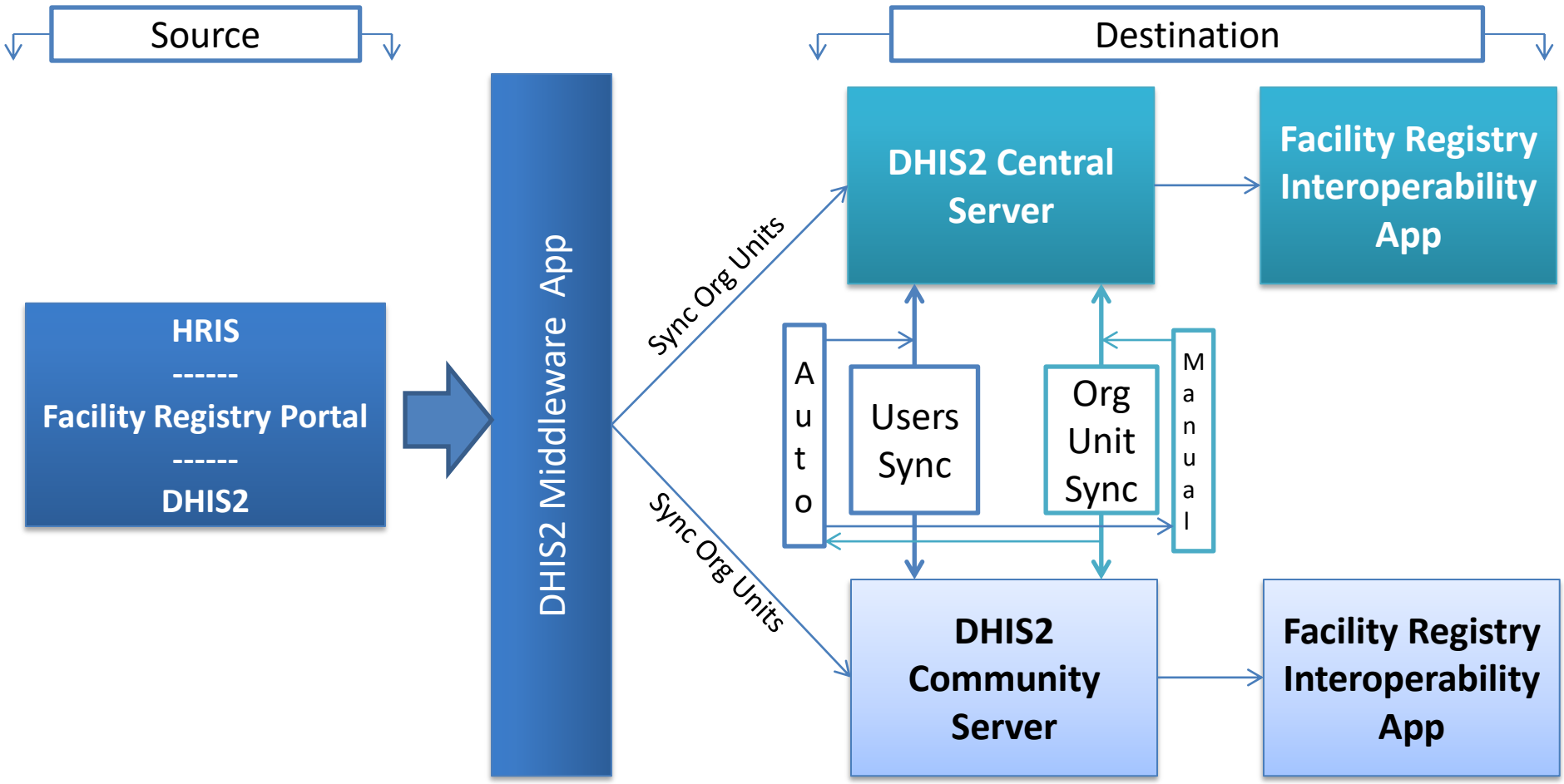


Figure: Multiple DHIS2 and HRIS Interoperability High Level Architecture

Internal Architecture of Interoperability Apps

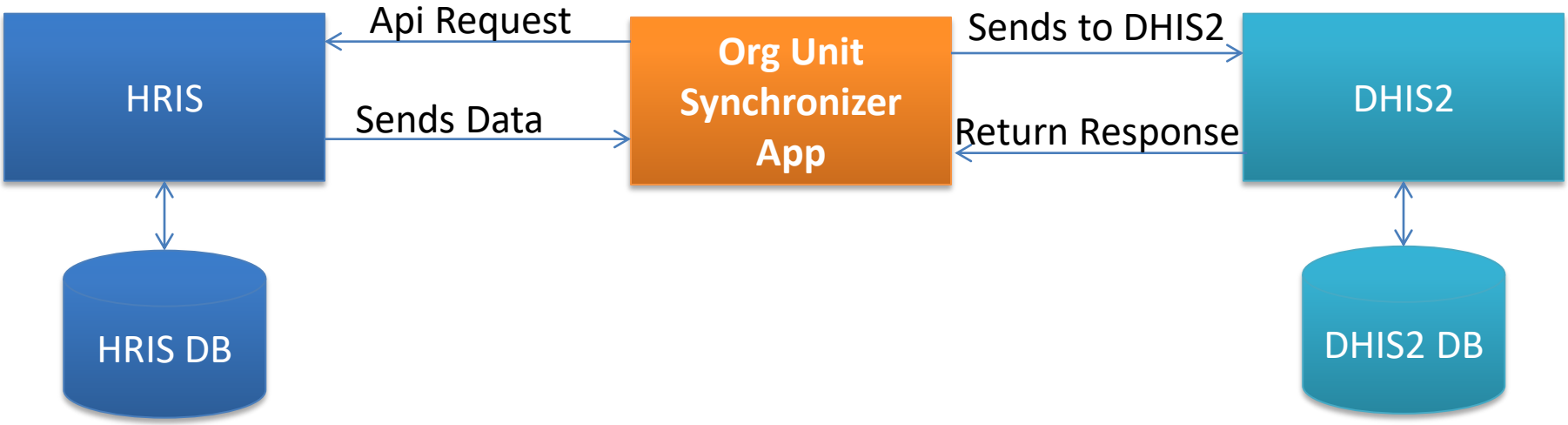
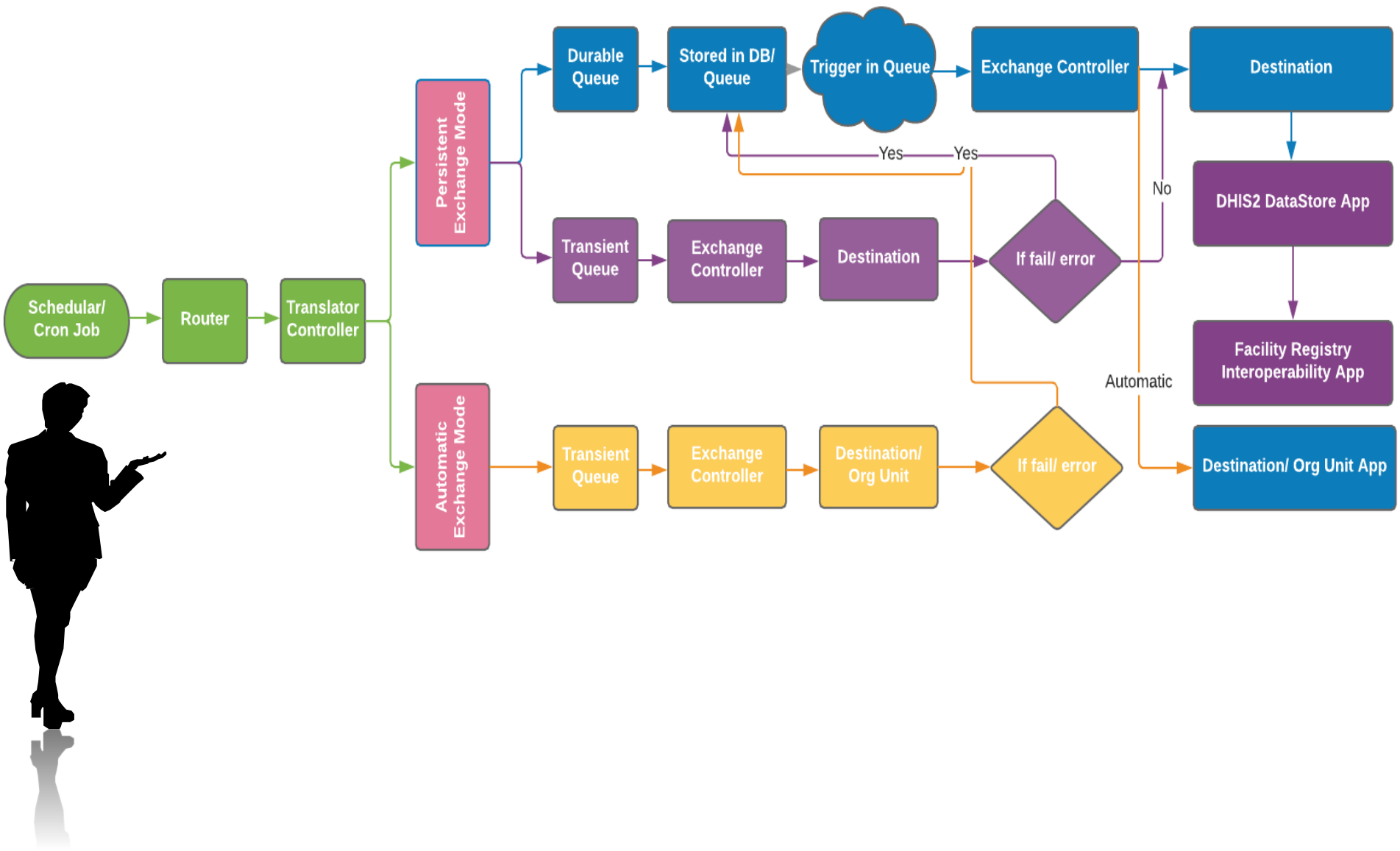
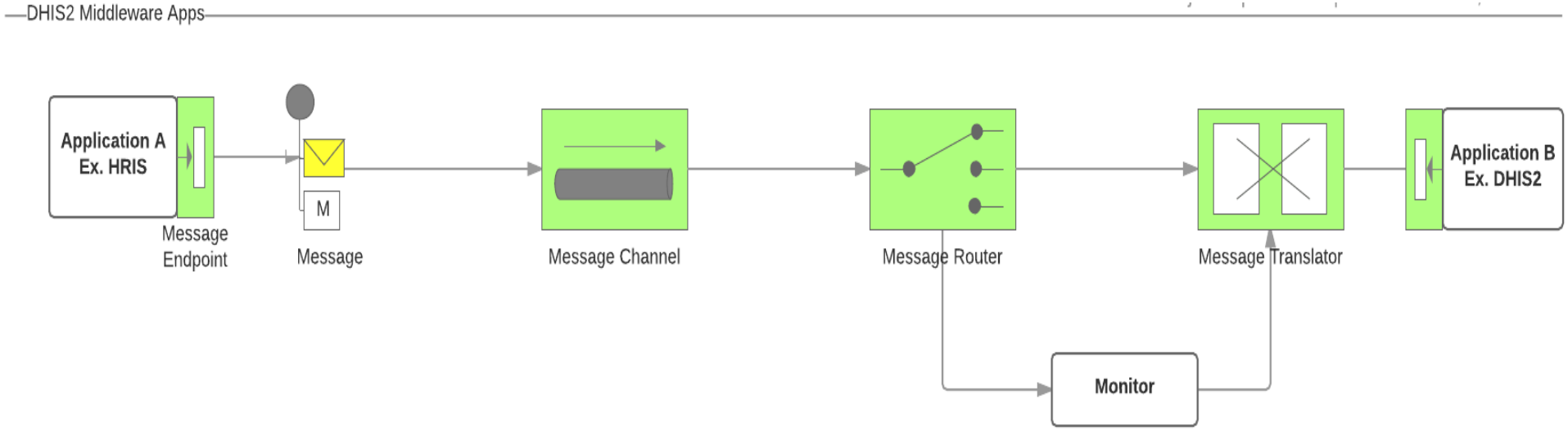


Figure: DHIS2 and HRIS Interoperability High Level Architecture

How Org Unit Synchronizer App works?



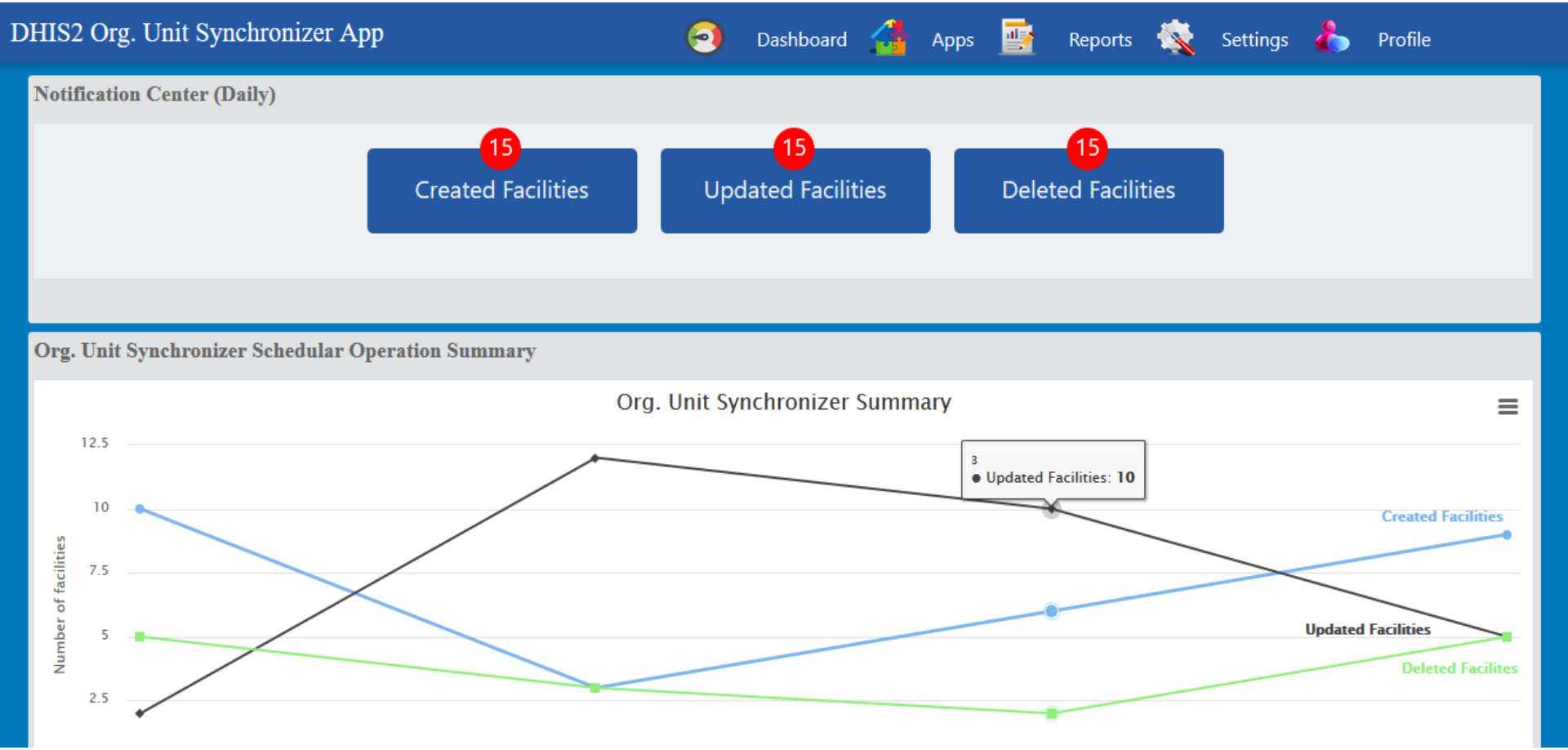
Message exchange design pattern



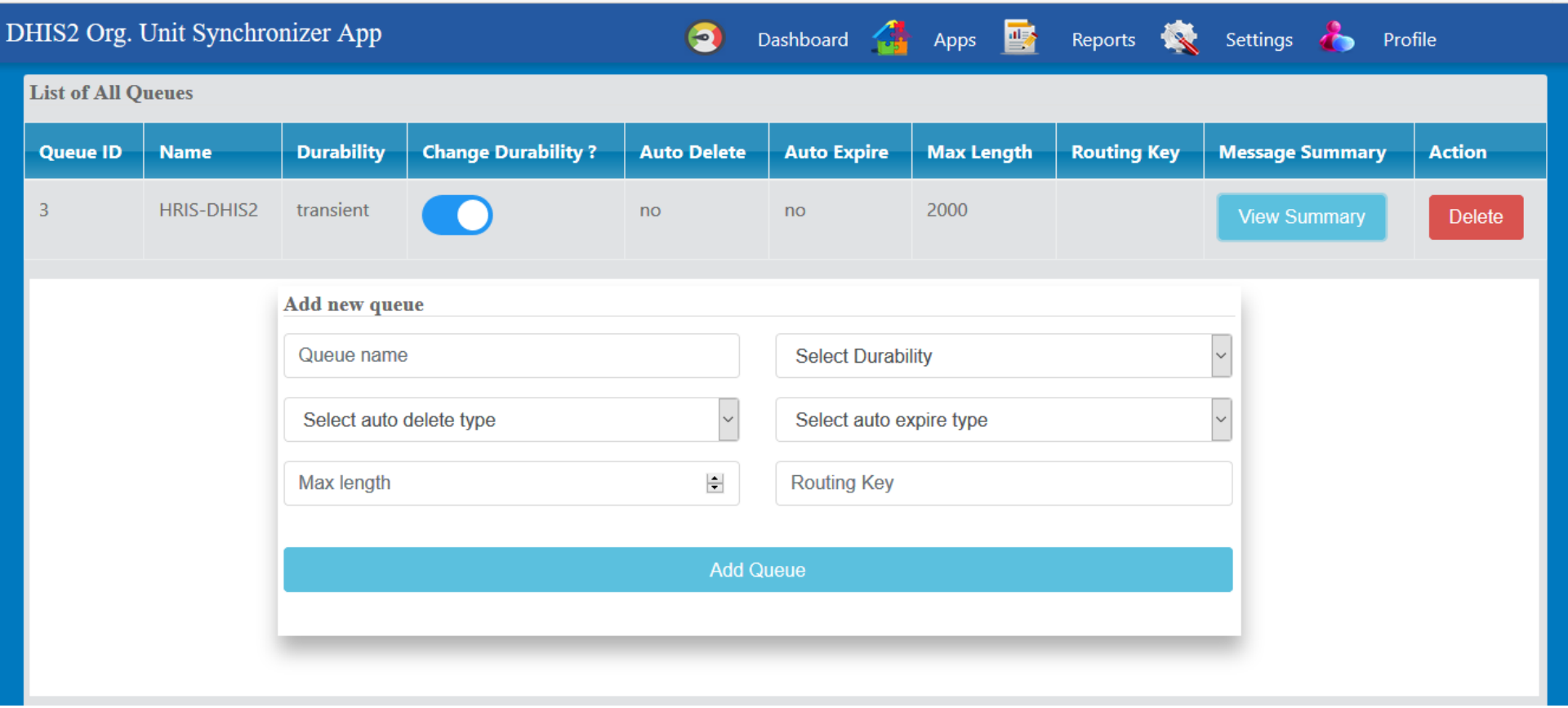
Live demo >> Org Unit Synchronizer App

Live demo >> Facility Registry Interoperability App

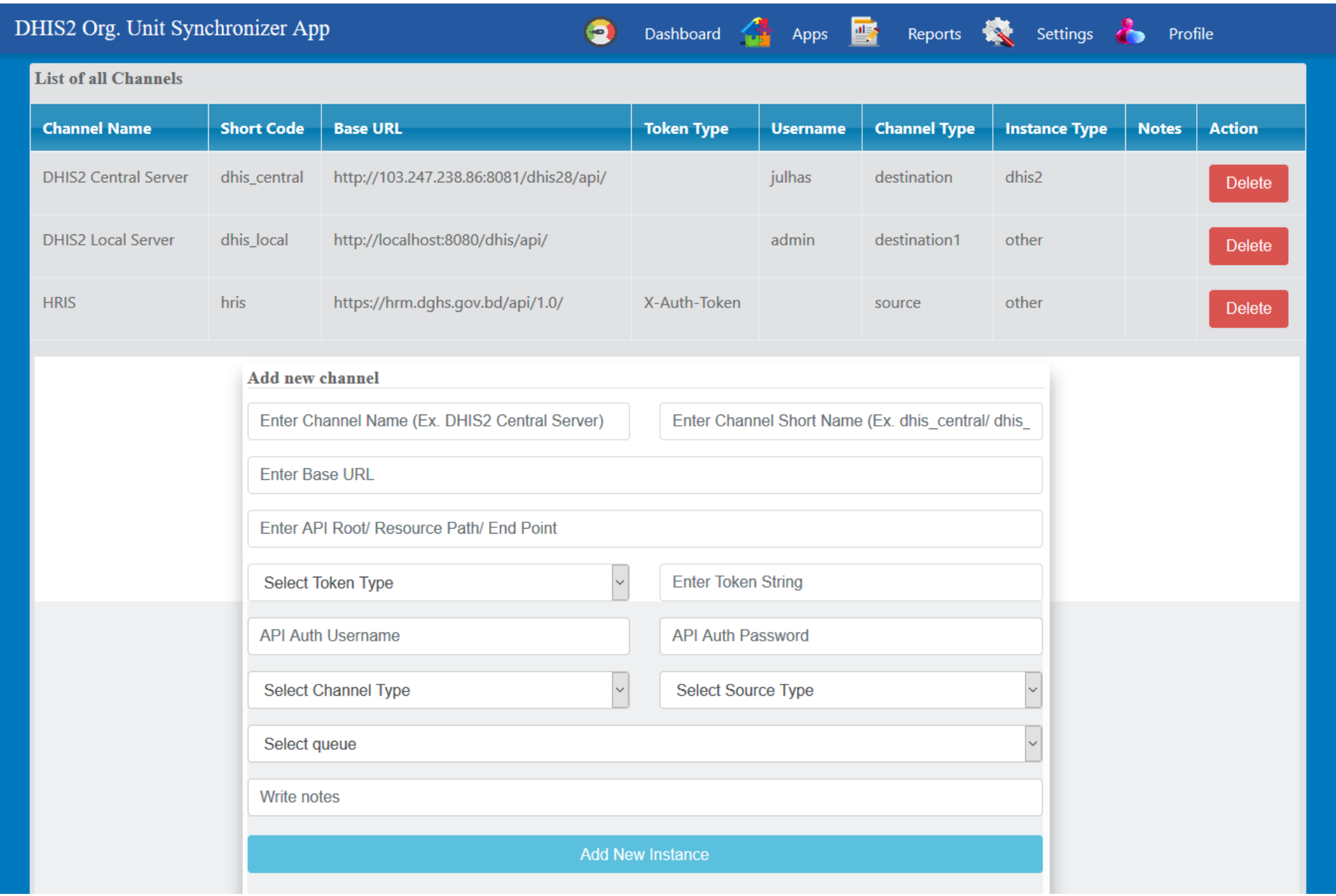
Org. Unit Synchronizer App - Dashboard



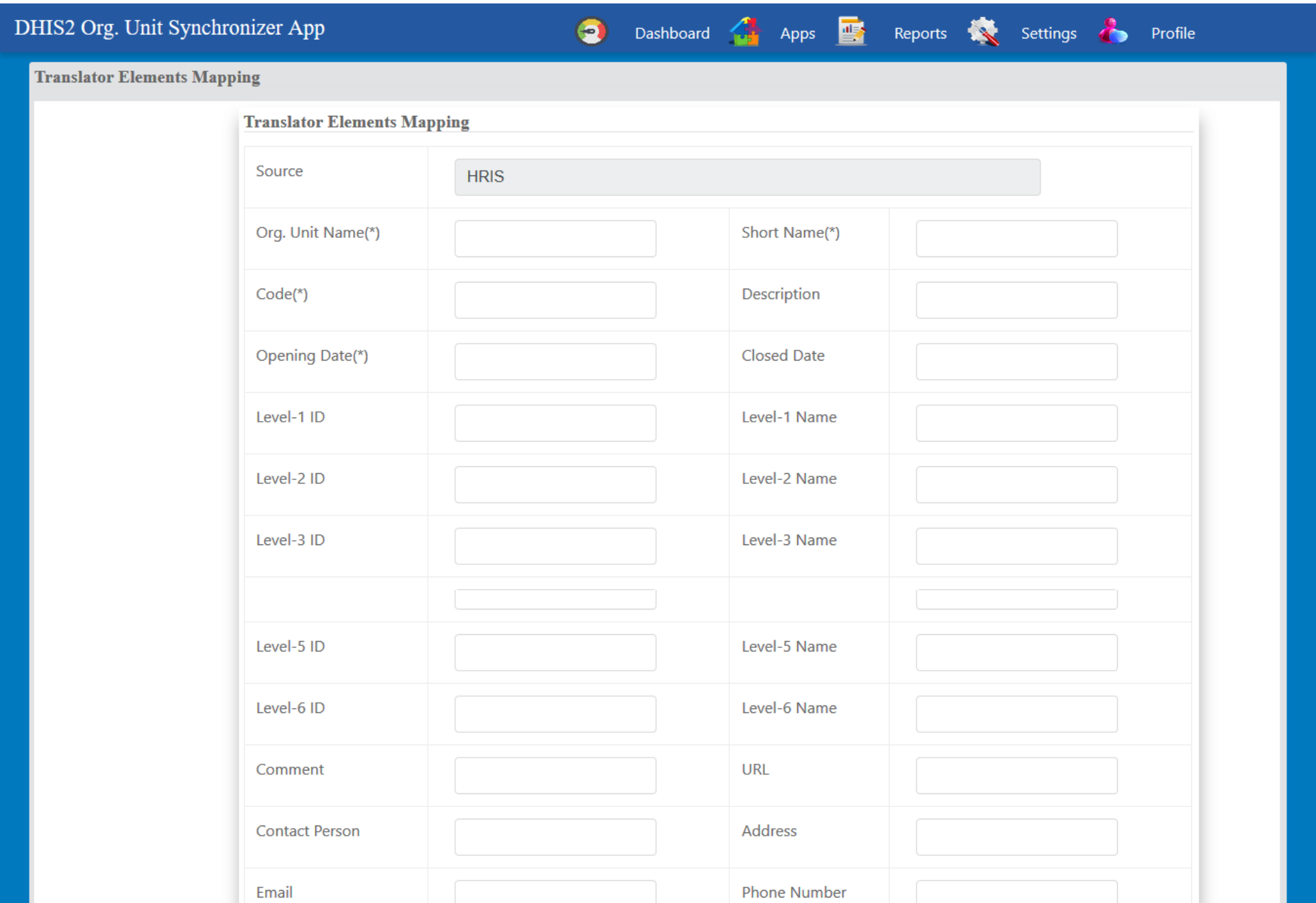
Org. Unit Synchronizer App - Queue Management



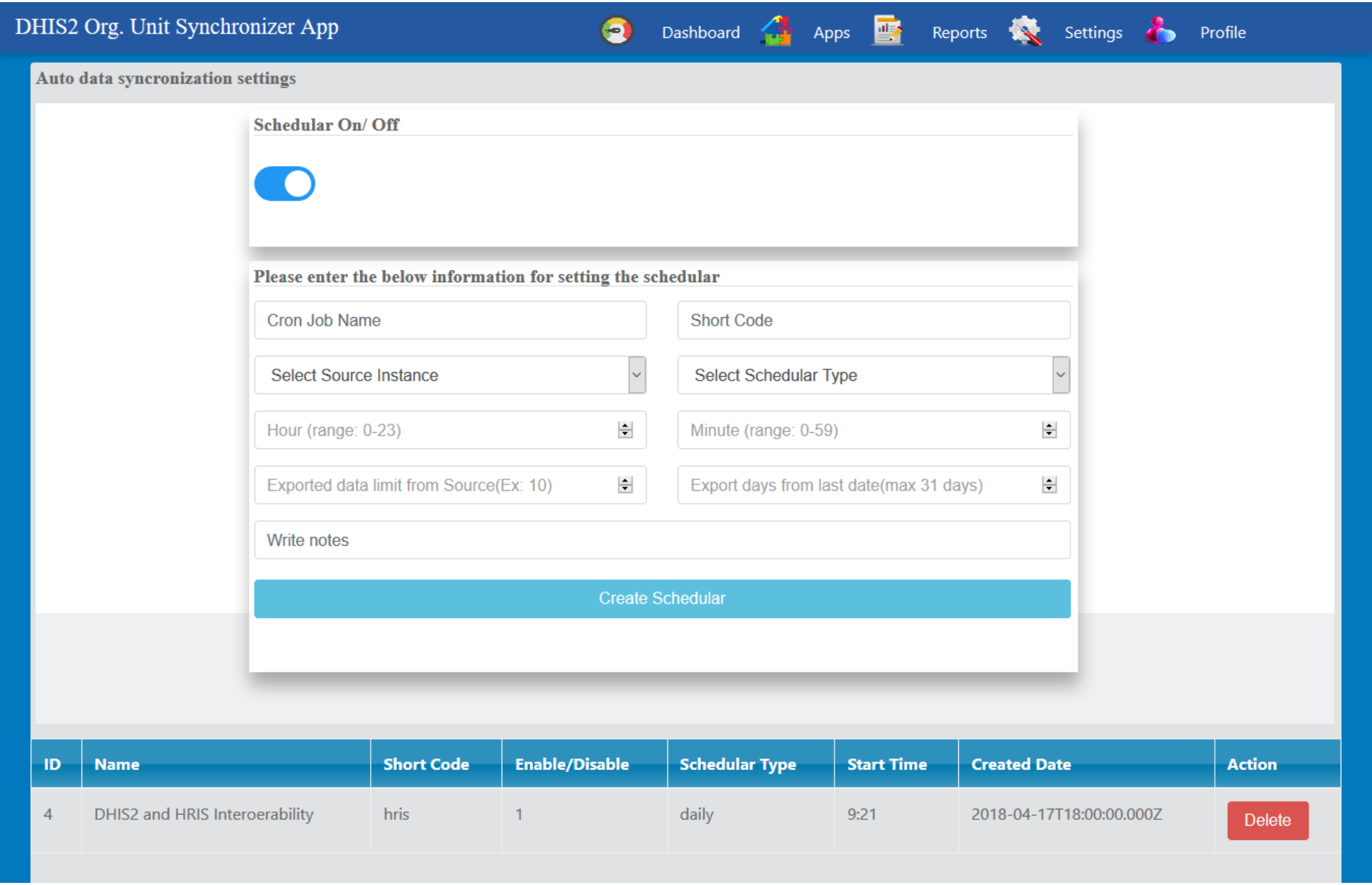
Org. Unit Synchronizer App – Channel Management



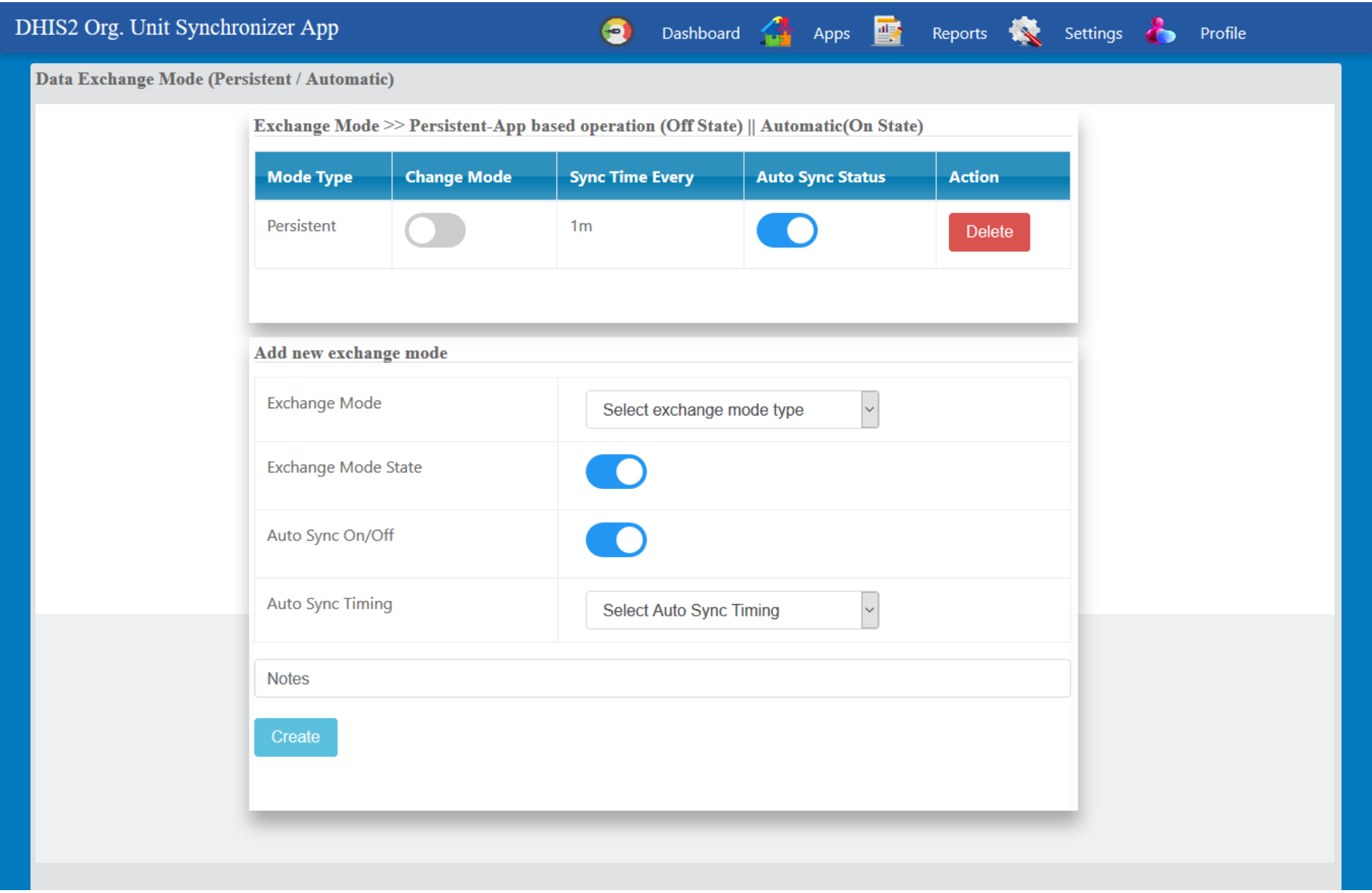
Orr Unit Synchronizer App – Translator Elements Mapping



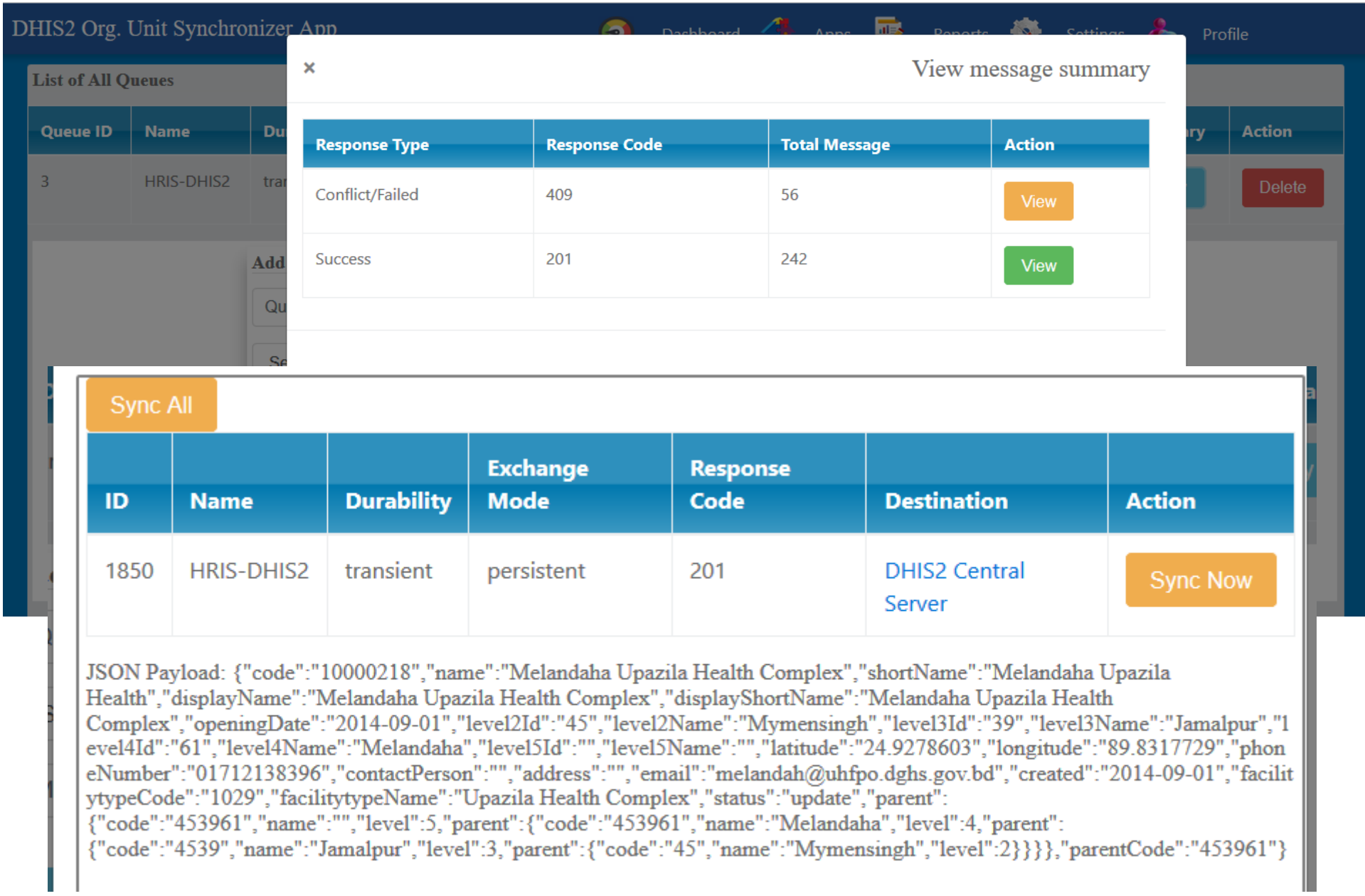
Orr Unit Synchronizer App – Cron job/ Scheduler settings



Orr Unit Synchronizer App – Message Exchange Mode setup

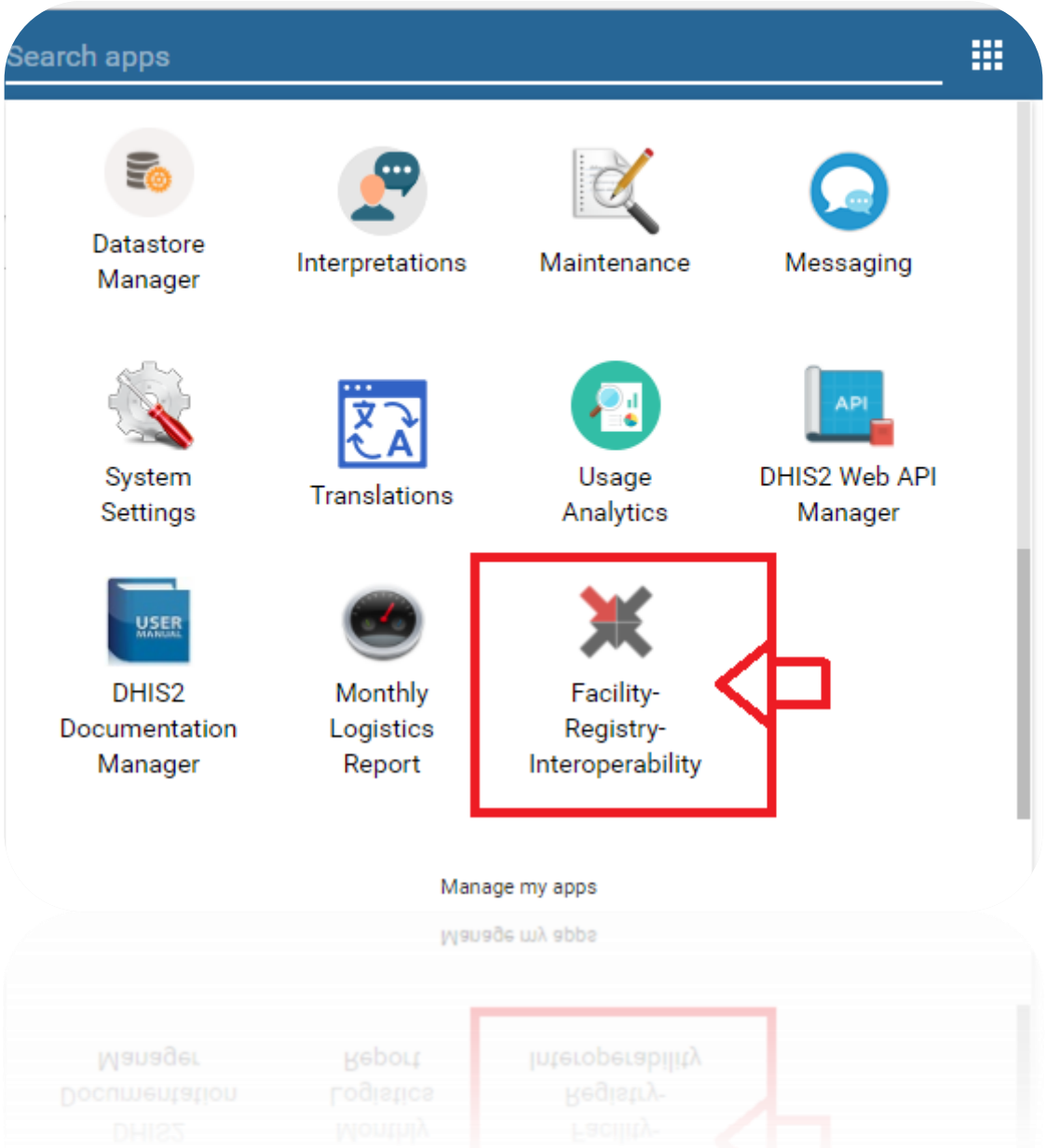


Org. Unit Synchronizer App – View Exchnages Message Summary

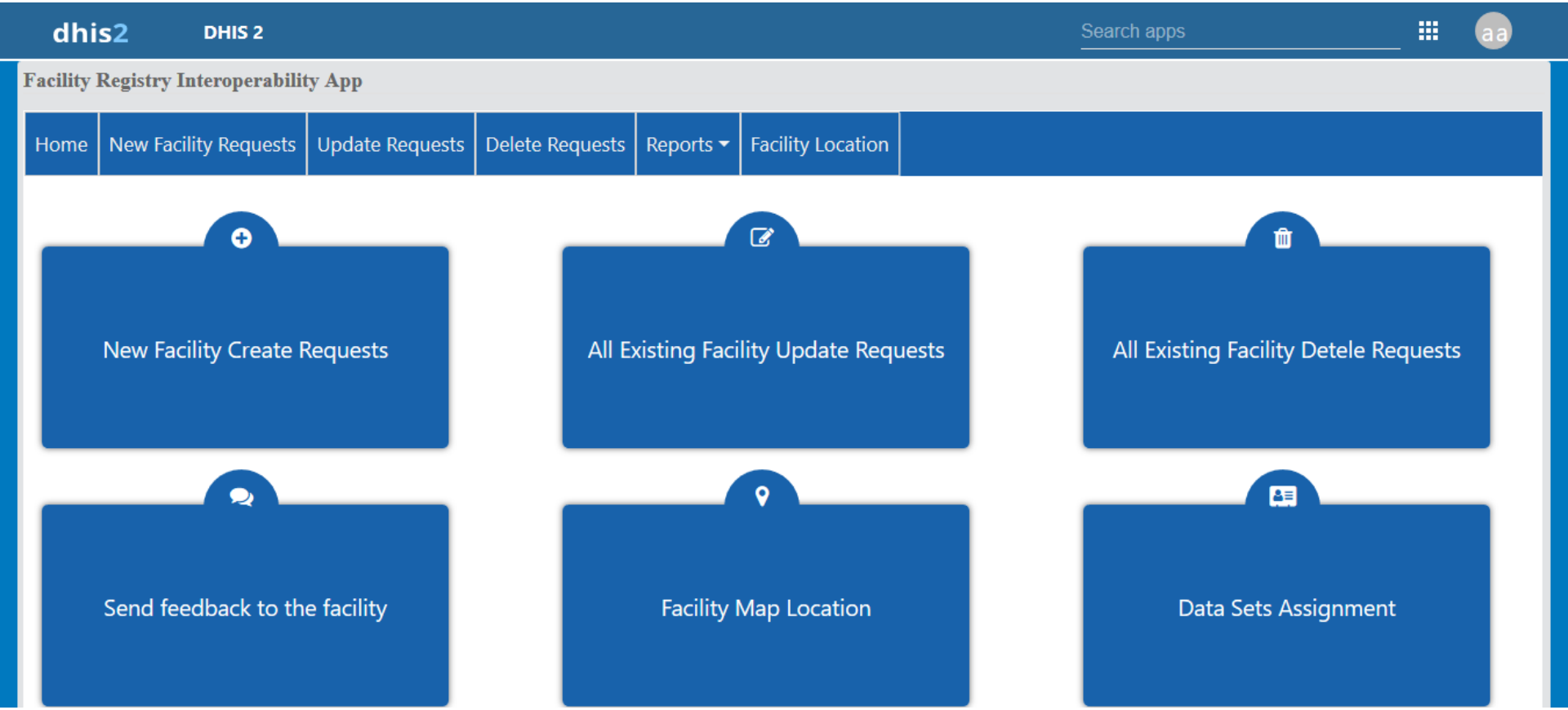


Snapshots: Facility Registry Interoperability App

Go > Apps > Facility Registry Interoperability



Facility Registry Interoperability App Interface >> Dashboard



Facility Registry Interoperability App Interface >> New Requests

Facility Registry Interoperability App

Home | New Facility Requests | Update Requests | Delete Requests | Reports | Facility Location

List of all new facility create requests

Facility Name & Code	Detail	Parent Code	Opening Date	Location	DataSets	Status	Approve	Ignore	Feedback	View
Central Drug Addiction Treatment Centre (10024644)		302690	2018-01-09	Lat: Lng:		New				
Purba Charbata CC - Subarnachar (10024733)		207585	2018-04-09	Lat: Lng:		New				
Nayapara CC - Madan (10024664)		457256	2018-03-10	Lat: Lng:		New				
Laba Para CC - Mahalchari (10024640)		204665	2018-01-04	Lat: Lng:		New				
Akbari CC - Mahalchari (10024643)		204665	2018-01-04	Lat: Lng:		New				
Hobiganj District Jail Hospital (10024651)		603644	2018-02-04	Lat: Lng:		New				
Department of Agricultural Extension (DAE), Khamarbari (10024649)		302690	2018-01-28	Lat: Lng:		New				
Pathakata CC - Mathbaria (10024637)		107958	2018-01-04	Lat: Lng:		New				
Mahmudpur CC- Kalaroa (10024647)		408743	2018-01-11	Lat: Lng:		New				
Khudrokathi CC - Babuganj (10024726)		100603	2018-04-04	Lat: Lng:		New				
Jahajmara CC - Subarnachar		207585	2018-04-09	Lat: Lng:		New				

Facility Registry Interoperability App Interface >> All Update Requests

Facility Registry Interoperability App

Home | New Facility Requests | Update Requests | Delete Requests | Reports | Facility Location

List of all update requests

Facility Name & Code	Detail	Parent Code	Opening Date	Location	DataSets	Status	Approve	Ignore	Feedback	View
Khangonj Union Sub Center (10000528)		308276	2014-09-01	Lat: Lng:		Update Request				View
Khaliajuri Upazila Health Complex (10000486)		457238	2014-09-01	Lat: 24.6864178 Lng: 91.1161165999999		Update Request				View
Manikganj (sadar) Upazila Health Office (10000295)		305646	2014-09-01	Lat: 20.661913 Lng: 88.002548		Update Request				View
Shibpur Upazila Health Complex (10000461)		306876	2014-09-01	Lat: 24.037979 Lng: 90.733634		Update Request				View
Ghior Upazila Health Complex (10000281)		305622	2014-09-01	Lat: 23.8703485 Lng: 89.9159784999999		Update Request				View
Madaripur Civil Surgeon Office (10000262)		305454	2014-09-01	Lat: 23.16509 Lng: 90.21196		Update Request				View
Kishoreganj (sadar) Upazila Health Office (10000242)		304849	2014-09-01	Lat: 24.2717 Lng: 90.4636		Update Request				View
Belabo Upazila Health Complex (10000436)		306807	2014-09-01	Lat: 24.082201 Lng: 90.838974		Update Request				View

Facility Registry Interoperability App Interface >> All Delete Requests

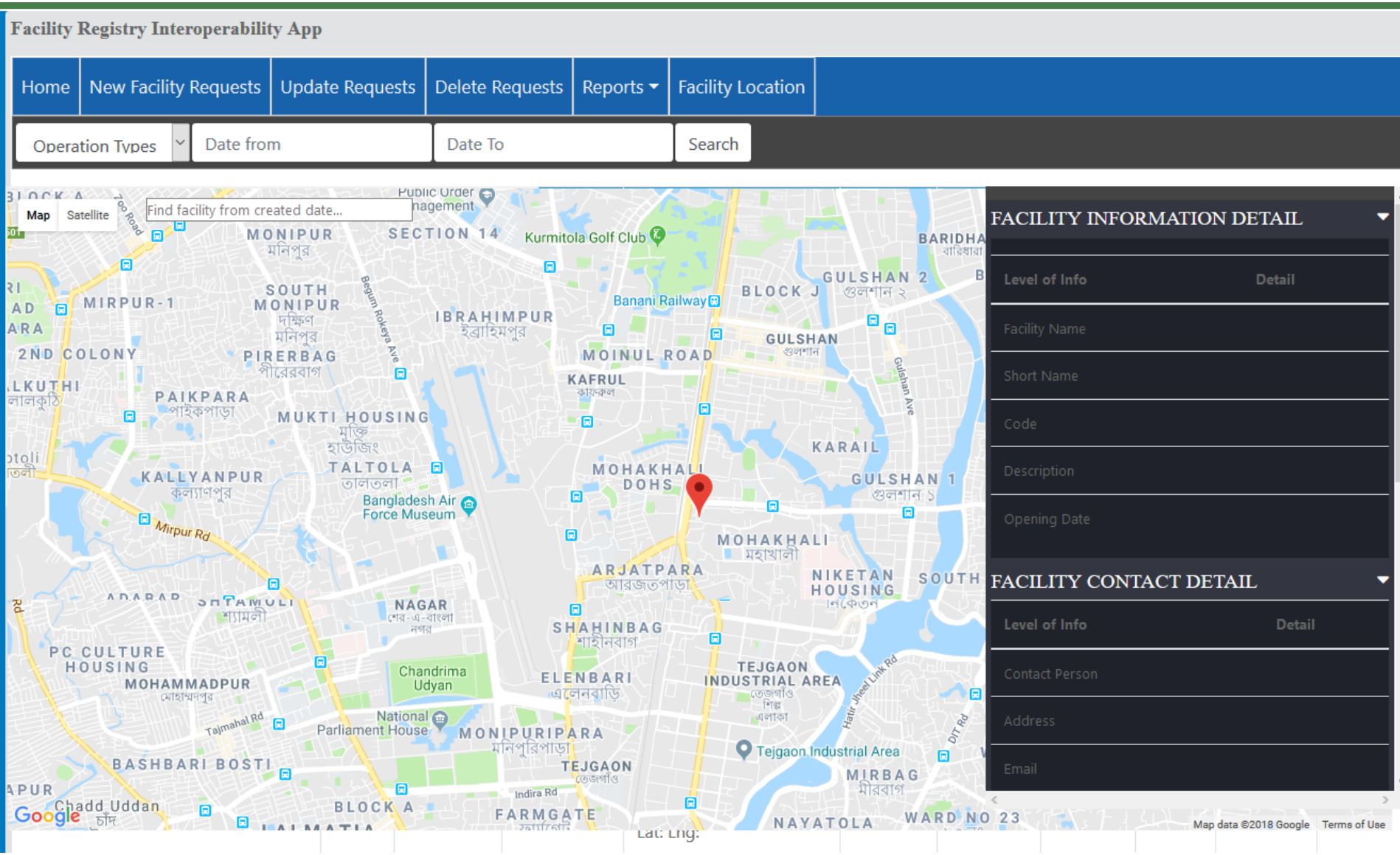
Facility Registry Interoperability App

Home | New Facility Requests | Update Requests | Delete Requests | Reports | Facility Location

List of all delete requests

Facility Name & Code	Detail	Parent Code	Opening Date	Location	DataSets	Status	Approve	Ignore	Feedback	Restore
Bilmamudpur Union Sub Center (10000099)		302947	2014-09-01	Lat: Lng:		Delete Request				
Dhaka Dental College (10000027)		302608	2014-09-01	Lat: Lng:		Delete Request				
Motijheel Urban Dispensary (10000046)		302654	2014-09-01	Lat: Lng:		Delete Request				
Palashi Barac Urban Dispensary (10000049)		302663	2014-09-01			Delete Request				
Birulia Union Sub Center (10000082)		30267233	2014-09-01	Lat: Lng:		Delete Request				
Khilgoan Urban Dispensary (10000042)		302636	2014-09-01	Lat: Lng:		Delete Request				
Sir Salimullah Medical College (10000055)		3026	2014-09-01	Lat: Lng:		Delete Request				
Gandaria Urban Dispensary (10000037)		302624	2014-09-01			Delete Request				

Facility Registry Interoperability App Interface >> Location in map



Thanks
Any questions?