Biological Threat Reduction Program

(BTRP)

Electronic Integrated Disease Surveillance System (EIDSS)

patch 6.1.0.90

Release Passport

Revision 1.0

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1. Introduction

This release of EIDSS 6.1.0.90 includes the following changes and fixes:

- Functional changes to introduce eHealth data import mechanism for Ukraine,
- Customization changes for Jordan:
    - Introduced Jordan MOA customization package,
    - JO specific Urgent Notification report,
    - Resource files with Arabic translations,
- Functional changes to introduce AVR data filtration mechanism,
- Changes, made in the process of the system Load Testing, to support big number of concurrent users and big amount of new and updated data, and to increase performance
    - Performance fixes in Database,
    - Fixes and new setting in Web application to support the expected system load,
    - Fixes of errors detected in Error Logs on production & load test stand.

2. EIDSS Patch 6.1.0.90 Scope

2.1. eHealth Data Import Mechanism

The eHealth data import mechanism, included in EIDSS Patch 6.1.0.90, has been developed based on the change request from the Ukrainian PHC (ticket#12763 in HelpDesk).

For the full description of the implemented solution, please refer to the technical specification *EHS_EIDSS_Data Import Solution Specification_v1.2*.

2.2. JO Customization

To support EIDSS v6 deployment in Jordan, EIDSS v6 has been customized based on the requirements received from Jordanian Working Group.

EIDSS Patch 6.1.0.90 includes the following changes with regards to EIDSS JO customization:

- Introduced Jordan MOA customization package,
- Developed and tested JO specific Urgent Notification report,
- Added resource files with Arabic translations.

2.3. AVR Data Filtration Mechanism

The mechanism for data filtration in EIDSS AVR module, introduced in EIDSS Patch 6.1.0.90, has been developed based on the change request from the Ukrainian PHC (ticket#12657 in HelpDesk).

In EIDSSv6 data filtration used to be applied to Journals, whereas in AVR users of the 3rd level sites could see all non-filtered data. The Ukrainian PHC has requested to apply data filtration mechanism to AVR module, same as it is applied to EIDSS Journals.

Data filtration mechanism in EIDSS AVR has been developed and has been configured to be optional. For Ukraine it has been switched on. If data filtration mechanism is switched on for AVR, then standard filtration shall be applied to all search objects in AVR in the same way, it is applied in system Journals. If configurable filtration rules (unidirectional, bidirectional) and/or border areas filtration rules are applied in the database, then configurable filtration rules and/or border areas filtration rules shall be applied to all search objects in AVR in the same way, it is applied in system Journals.

For the full description of AVR Data Filtration mechanism, please refer to the technical specification *AVR_DataFiltration_Solution_TechnicalSpecification*.

For the Test Plan with test results, please refer to *EIDSS AVR Filtration_Test Plan with Test Results*.

2.4. Solutions Applied based on Load Testing

Load Testing was conducted for Web EIDSS version 6.1 in purpose to determine all issues related to the performance of Web EIDSS, analyze the results, investigate bottlenecks, and make fixes as possible.

The issues, found during EIDSS Web Load Testing on the Initial Environment Configuration, were investigated. For each of the found bottlenecks, solutions to resolve the issue have been suggested, implemented and tested.

The following fixes and changes have been applied for the database and Web Application and included into EIDSS Patch 6.1.0.90:

- Database changes to support big number of concurrent users and big amount of new and updated data, and to increase performance:
  - New database settings: database default Transaction Isolation Level has been changed to READ_COMMITTED_SNAPSHOT, which allowed to support concurrent users and to avoid locks and deadlocks in the database when different users try to reach the same data at the same time.
  - New database indexes: BV has analyzed system usage scenarios and database queries and based on this analysis introduced ~20 new database indexes, which allowed to increase performance of database queries.
  - Optimized SQL programmability:
    - Some database triggers have been disabled; their functionality has been replaced with the scheduled tasks to avoid deadlocks.
    - Database triggers, stored procedures and functions have been optimized to increase performance and avoid deadlocks.
  - Scheduled maintenance procedures for database have been optimized.
  - SQL replication settings have been modified to process bigger amount of data in one synchronization iteration.
- Fixes and new settings in Web Application:

- o BV has analyzed Error Logs from production and load test stand, and refactored code to avoid errors: handling exceptions has been refactored, additional validation rules for input parameters have been introduced.
- o New setting Maximum Connection Pull Size has been introduced in configuration file, which allows to specify different max connection number in the pull between Web Application and SQL Server (set to 1000 connections for Ukraine).
- o New setting SQL Command Timeout has been introduced in configuration file, which allows Web Application to wait for response from database longer.
- o Specific fix for Ukraine: specific http attributes have been added to Web Application methods to fix the issue with special characters, used in Ukrainian names.

2.5. Resolved Helpdesk Tickets

EIDSS 6.1.0.90 resolves the following Helpdesk tickets, listed in the table below.

Ticket #	Issue Type	Priority	Summary	Comments
12763	Integration request	High	Import COVID-19 cases from EHS	Main UP request for EHS-EIDSS data import solution. Resolved in patches 6.1.0.76 and 6.1.0.79.
12657	Change request	Med	Currently in the system data in Catalogs for 3rd level sites is filtered according to data filtration rules and permissions mechanism, whereas in AVR data filtration rules and permissions mechanism are not applied and 3rd level sites have access to all the data. Data filtration rules and permissions mechanism is requested to be implemented in AVR.	Resolved
12759	System maintenance issues	Med	DB Falcon has deadlocks with EventActive table	Resolved

Ticket #	Issue Type	Priority	Summary	Comments
12735	System maintenance issues	Med	The EIDSS website starts up slowly in the afternoon	Resolved