

Background

1. National Delivery Agreement 5 Outcome; namely: *“A Skilled and Capable Workforce to Support an Inclusive Growth Path”* includes a particular reference to the strategic goal of developing *“a credible institutional mechanism for skills planning”* as articulated in Goal 1 of the National Skills Development Strategy III and Output 1 of Outcome 5.
2. Output 4.1.1.1 of the National Skills Development Strategy III requires that *“Capacity is established within the Department of Higher Education and Training to coordinate research and skills planning”*.
3. As a result of the above mentioned goals the Department of Higher Education and Training (DHET) is improving the current SETA Quarterly Monitoring Report format through an automated system which uses unit record, batch file data collection process which will feed data from the SETA’s into the Skills Education and Training Management Information System (SETMIS).
4. The existing SETA Quarterly Monitoring Report format needs some improvements because the format of the data that is collected limits the Departments ability to:
 - validate the integrity of the data,
 - implement the data in a relational form, and
 - integrate the data.As a result the Department is unable to create a credible, integrated and unified view of the data being supplied to the Department by SETAs.
5. SETMIS is a data warehouse¹ that will act as a feeder management information system to the Higher Education and Training Management Information System. The overall objective of HETMIS, and as a result SETMIS, is to create a credible, integrated and unified view of the skills supply side in the country to improve skills planning to meet the needs of an inclusive growth path for the country.
6. The development and implementation of HETMIS and SETMIS is governed by a core set of principles². The submission of data to SETMIS, the processing of data submissions by SETMIS and the archiving of SETMIS data submissions is directed by a standard³. The file naming convention utilized for SETMIS data submissions is determined by a further standard⁴.

¹ A data warehouses is “... a subject-oriented, integrated, non-volatile, and time-variant collection of data in support of management’s decisions...”

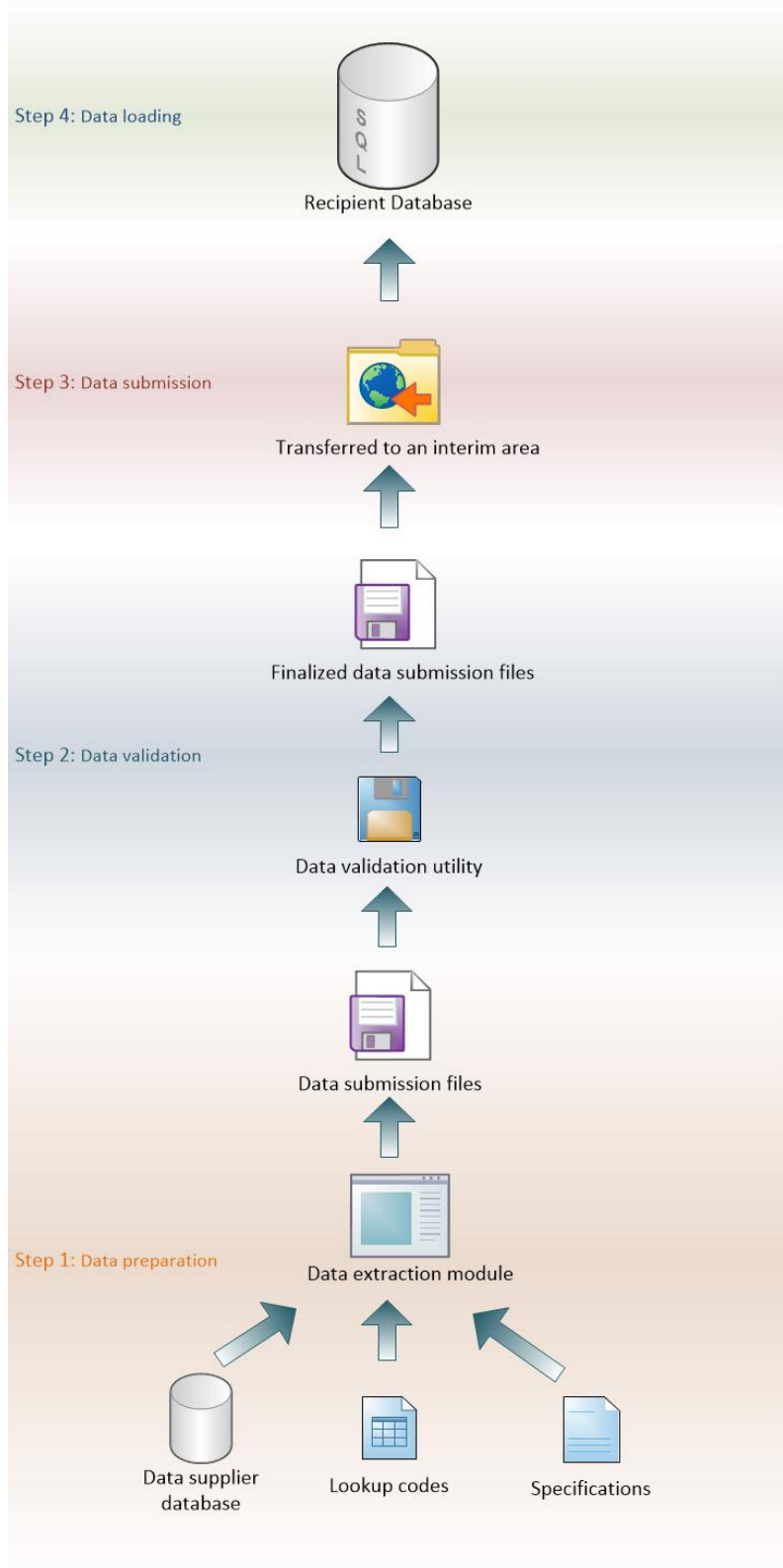
² <https://webapps.dhet.gov.za/Homepage.aspx> - ‘Core Principles for HETMIS’

³ <https://webapps.dhet.gov.za/USUS.aspx> - ‘Submission processing and archiving standard’

⁴ <https://webapps.dhet.gov.za/USUS.aspx> - ‘File naming convention’ and ‘File naming convention ETCBIS and file identifiers’

Discussion

7. The process of submitting data to SETMIS has four discrete steps as illustrated below:



Step 1: Data preparation – entails the extraction of data from the SETA’s operational information system in a predefined format⁵ utilizing specific data codes⁶. The data extraction module on the SETA’s operational information system is developed by the service provider of the operational information system.

Step 2: Data validation – entails the validation of the data that has been extracted from the SETA’s operational information system to ensure that the extracted data conforms to the technical requirements of the data submission (i.e. the data is in the correct format, utilizes the correct data codes and adheres to predefined data business rules). The data validation application is distributed free of charge by the Department to the SETAs. If the data submission complies with all the requirements a finalized data submission is created which is compressed and encrypted.

Step 3: Data submission – the data validation application distributed by the Department to the SETAs, on confirmation from the SETA user, transfers the data submission to an interim server of the Department.

Step 4: Data loading – the server hosting the SETMIS data warehouse collects data from the interim server of the Department to which SETMIS data submissions are transferred by the data validation application on a regular basis. Once a submission is received the data is loaded into SETMIS and feedback is provided to the SETA. The feedback to the SETA includes an overview of the loading of the data and standardized reports of the SETA’s data in SETMIS.

The reader should note that the overall data submission process closely emulates the data submission process of the National Learner’s Records Database (NLRD) which all SETAs are comfortable completing. Note however that the Department’s process is slightly more automated in that Step 4, unlike the NLRD data submission process, requires no human intervention.

8. The first step of the process requires that the Department issue a load file specification and supporting lookup tables for the SETMIS data loading process.

The load file specification⁷ provides a clearly stated technical requirement in regard to the following aspects of the SETMIS data submissions:

- scope of the submissions (i.e. the type of data required)
- frequency of the submissions (i.e. how often the SETAs must submit data), and
- content of the submissions (i.e. the exact data fields and expected content of each data field)

The content of some of the data fields in the submission files must be coded in order to ensure consistent reporting once the data from all of SETAs have been integrated in SETMIS. To this end the load file specifications are complemented by a lookup list of valid data codes that may be utilized in specific fields in the data submission files⁸.

⁵ as issued by the Department

⁶ as issued by the Department

⁷ <https://webapps.dhet.gov.za/USUS.aspx> - ‘SETMIS MR file specification ‘

⁸ <https://webapps.dhet.gov.za/USUS.aspx> - ‘SETMIS MR file specification lookup values’

9. The SETMIS load file specification is founded on the NLRD load file specification which was extended to meet the specific data needs of the Department. This was a strategic decision that hoped to minimize the information system related development that would be required in order to meet the emerging requirement from the Department for an automated unit record, batch file data collection process.
10. Although the development of the SETMIS data submission process and load specification closely resembles that of the NLRD it should be noted that the NLRD:
 - supports the monitoring and evaluation of the implementation of the National Qualifications Framework and its focus is on the quality of education being provided (Quality Council centric),
 - collects all learner enrolments and achievements,
 - does not collect data in regard to the funding of learnerships/qualifications/unit standards,
 - does not collect information in regard to employers, and
 - does not collect information in regard to trade tests and internships.

Inversely SETMIS:

- supports the monitoring and evaluation of the funding of learning programmes (SETA centric),
- collects all learner enrolments and achievements as of 2010,
- does not collect information in regard to QC accreditations and qualification/unit standard registrations,
- does not collect information in regard to provider accreditations, and
- does not collect information in regard to assessor registrations.

Closing

11. The development of the SETMIS load file specification was conducted as a consultative process. The overall process was guided by the SETMIS Technical Committee which included Information System related representatives from four different SETAs.
12. SETMIS and its related data loading processes, procedures and specifications were presented to all SETAs in a workshop that was convened by the Department in March 2015. The Department distributed the SETMIS load file specifications to all SETA CEOs for comment. Comments received by the SETAs has been incorporated into the specification.

A further workshop was convened by the Department with all information system service providers that develop and support SETA operational information systems in July 2015. It was agreed with the service providers that the implementation of SETMIS would commence in July 2016.

13. The implementation of SETMIS and its related data loading processes and procedures was delayed pending the gazetting of the SETMIS load file specifications (gazetted on 17 March 2017). All SETAs are required to submit data to the Department in SETMIS format as of 17 July 2017.