NAPLAN Online – Jurisdictional Results and Reporting Data Set Technical Specs (DRAFT)

File specification for extraction of results and reporting data from the National Assessment Platform

(based on the draft version 1.9 of the Results & Reporting data)

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Contents

Version Control

Results and Reporting Data Set Specification Document Version Control			
Version	**Date:**	**Author/Organization:**	**Comments**
V0.1	31/8/2016	Linda Marshall and Anthony Yaremenko /NSIP	Initial Draft
V0.2	2/9/2016	NSIP	Edits following ESA/Janison review
V0.3	7/9/2016	Nick Nicholas, NSIP LM AY NSIP	Updates to data transport, referenced dataset Updates to referenced dataset, XML and data exchange infrastructure post meeting with Janison.
V0.4	22/9/2016 27/9/2016	LM	Updates for XML based on interactions and feedback from Janison as well as the intention to support the transfer of the Codeframe. Updates of XML after XSD creation and validation

1. Introduction

1.1 Purpose

These guidelines are based on the draft NAPLAN Results and Reporting Data Set (v1.9), it also references the previously approved v1.2 NAPLAN Online Registration Data Set and addresses:

- Elements available for exporting from the National Assessment Platform relating to the Student, the Registration of the Student into the platform, the Student's NAPLAN test session and results as well as school, jurisdiction and national averages
- Elements used to support the production of various reports including the SSSR and ISR (but not the reports themselves)
- All elements available to authorised jurisdictional/TAA users as a result of NAPLAN assessment online for a given testing event.

1.2 Terminology

Table 1.1: Terminology

Term	Definition
ACARA	Australian Curriculum and Assessment Authority
ESA	Education Services Australia (tasked with developing the assessment platform)
ISR	Individual Student Report (rocket-ship report)
NSIP	National Schools Interoperability Program
OAWG	On line Assessment Working Group
SIF	Systems Interoperability Framework
SRM	Student Registration Management System
SSA	School Sector Authority (examples include the Department of Education Victoria)
SSSR	School Student Summary Report
TAA	Test Administration Authority (examples include the VCAA, BoSTES, QCAA)
XML	eXtensible Markup Language

1.3 Additional files

This document is complemented by a number of files to assist with integration development.

Files include:

Filename	Description
Online NAPLAN Reporting DataSet 1.9.xlsx	Reference excel spreadsheet, adapted from previous versions of the Results & Reporting dataset used in NSIP's 2016 Data Systems Readiness (DSR) consultations.
XSD/XML	Sample XML can be found in section 6.1

1.4 Document distribution

This document will be made available via NSIP's Github page.

1.5 Background – Assessment platform

The Australian Government Department of Education is funding Education Services Australia (ESA) to develop the Online National Assessment Platform ('the Assessment Platform') as part of a broader program of work that supports a range of assessment types including national online assessment. One of the components of the Assessment Platform is an online-based assessment delivery system. This system will allow for test creation and management using an existing item authoring system, user management and student registration, test administration, delivery, access and presentation of tests to eligible students, as well as scoring of these assessments and reporting for assessment events. Offline and low-bandwidth delivery solutions are also included as part of the overall assessment delivery system (outside the scope of this document).

1.6 Timing of data extracts

Authorised jurisdictional users will be able to extract data from the platform at any stage, post-test. i.e. extraction of data does not require school principal checklists to be completed, TAAs to indicate schools are ready, or the setting of any other operational flags or actions within the assessment platform. This is of critical importance and jurisdictions extracting data will need to take this into account when interpreting the data extracted.

Operational guidelines regarding actual real-world timing of extracts (i.e. outside the typical testing windows post 7pm AEST) will need to be established in consultation with ESA.

1.7 Format of data extracts

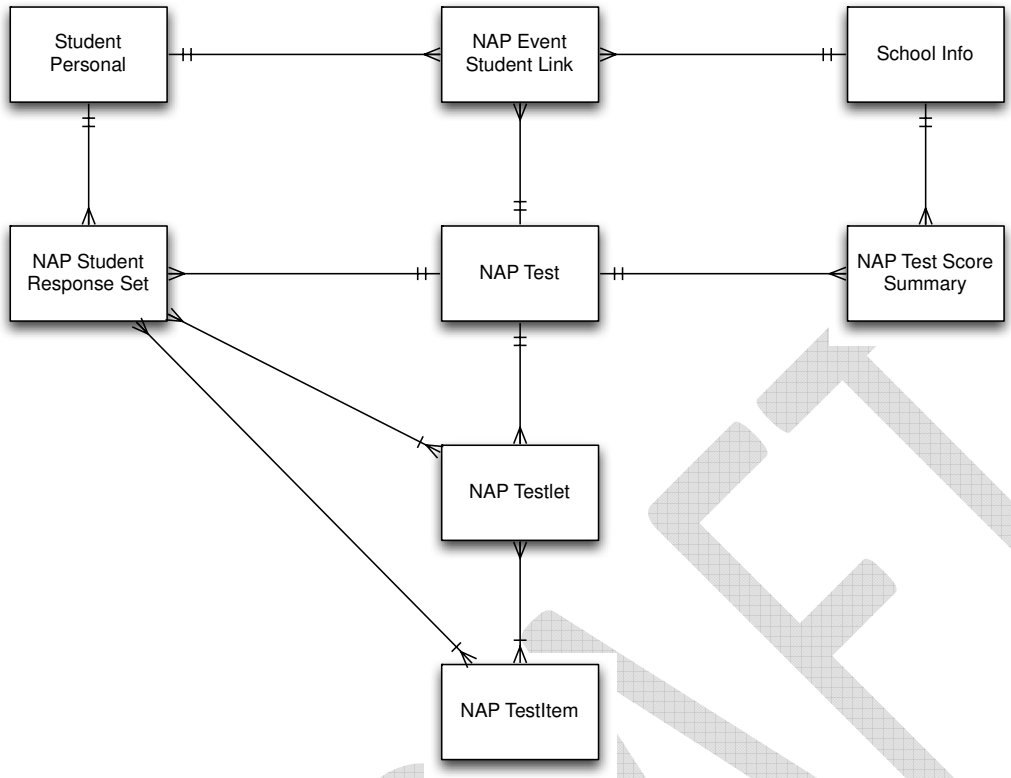
The format of the data will be XML (eXtensible Markup Language). XML is able to model the complex, repeating nested data structures produced by the assessment platform, something which flat text files (such as CSV – comma separated value files) cannot readily accomplish. XML is both human and machine readable and will allow for validation of the file contents via XSD (XML Schema Definition). Student writing script responses will be in HTML.

1.8 Method of data extracts

Jurisdictions will be able to request results and reporting data from the platform using a web based GUI. Requests for results and reporting data will be able to be made for:

- All schools the jurisdiction is authorised to (for example all Victorian schools)
- A single school
- Multiple schools (for example all schools that are part of the calibration sample)

2. XML – SIF Objects representing the Data Set



(i) XML – SIF Objects representing the entities associated with

The data available for export via the Jurisdictional Results & Reporting data set is represented as follows:

1. Student Personal: Contains all of the student demographic data and identifiers related to the student. Given schools can add/modify details of students on the assessment platform, the original input registration data will most certainly be different to the final student details recorded in the platform.

2. NAP Event Student Link: This object represents a student's attempt at a NAPLAN assessment. It includes key student identifiers, school identifiers, details of the test sat (including test name, level, domain), participation and exemption details, adjustments and PNPs, device details and the date of the test.

3. NAP Test: This object represents an assessment assigned in the context of NAPLAN, targeted at a particular domain and year level.

4. NAP Testlet: This object represents a testlet assigned in the context of NAPLAN, consisting of a number of items, and subject to branching rules according to adaptive testing.

5. NAP Student Response Set: Captures the student's response to NAPLAN Test Items in the context of a NAPLAN test. Data elements include Report exclusion flags, calibration and equating samples, domain scores, student band, testlet details, item responses, script images where appropriate, and links to test items.

6. NAP Test Item: Contains the item identifier, domain, subdomain, descriptor, released status, item difficulty, proficiency band, curriculum content descriptions, stimulus and writing rubrics. Where the item has not been published, the object refers to the URL of the item exemplar instead.

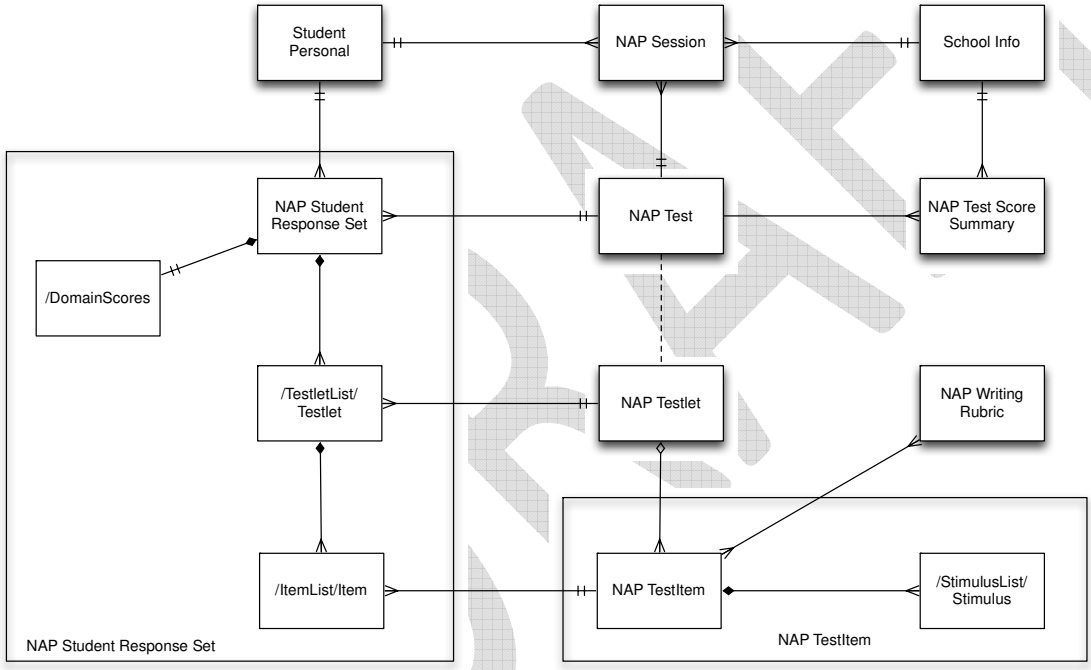
7. School Info: This object represents each school associated with students who completed a NAPLAN assessment and for which the system has recorded NAPLAN test scores. It may be required to relate a Student to a school or tenancy.

8. NAP Test Score Summary: For a given school this object details the aggregate scores for a NAPLAN test, including national, school, and jurisdictional averages for the same test.

9. Test Structure (derived from NAP Test Item): The full structure of a test (known as the NAPLAN codeframe) is included in the export to jurisdictions. ACARA typically provide codeframes for the following year's tests to jurisdictions once the tests have been finalised. For 2017, the 2017 codeframes will be established by ACARA when the tests are finalised (in early 2017). This structure is conveyed through additional fields in the NAP Test Item object, describing the testlet(s) and test(s) they belong to.

Underlying Conceptual Model is described below:

The NAPWritingRubric objects are in a many:many relation with NAPTestItem objects. In the implementation XML model, the Rubrics and Stimuli are contained within NAP Test Item. The DomainScores exist within the NAP Student Response Set.



3. Interface specifications

3.1.1 Export Complete Results and Reporting Data for NAPLAN participants.

Business Functions Supported	Export complete set of NAPLAN Results & Reporting data for one, many or all schools.
Problem being solved	What is a complete record of the NAPLAN online assessment for all students across all year levels for a given year?
Description	See Diagram *(i)* above of all the objects involved in the exchange of Results and Reporting Data. This describes the exporting of: • All of the relevant, Student and NAPLAN Results information and their relationship/s. • The export will initially be a: ○ manual process initiated by TAA or other authorised users via the assessment platform (XML files)

Process or Function Pre-conditions	1. Data about students registering for the NAPLAN Online assessment cycle has been imported into the Assessment Delivery System from the SRM
	2. The students in scope have completed assessments on the platform
	3. The export will be available in XML:
	  i) The XML file naming convention will NAPResultsReporting.xml
	  ii) A file extension of .XML is required.
	  iii) The XML will comply with the SIF AU (3.4) standard available here.
	  iv) Students will be represented via the StudentPersonal object, and the Participation Status of "Partcipated" from a linked NAPSession Object; Results will be in the NAPStudentResponseSet object linked with the NAPTestItem object. The NAPTestScoreSummary, representing cohort comparison scores, is linked to the SchoolInfo object, which is linked to the NAPSession.

Process or Function Post-conditions	1. Consumers of the results and reporting data will perform any necessary transformations on the data as required
Business rules	1. Results and reporting data requests can be made multiple times 2. Results and reporting data requests can be made for one, many or all schools the user is authorised to access 3. Results and reporting data requests can be made at any time in the NAPLAN Online testing process for schools that have completed assessments in the system.

4. Data Validation

4.1 Test Data for Export

Test data for testing the bulk export of NAPLAN Online Jurisdictional Results and Reporting data can be accessed via the *NSIP Hits Testing Service* from November 2016.

5. Data Transport

The data format of exports of student results shall be SIF/XML. This will ensure that the complexity of results data can be captured properly, without devolving into a huge number of linked files for each result set, and that appropriate typing and validation can be built into data ingestion.

In the long term, it is highly desirable that the National Assessment Platform support the full SIF protocol, including SIF infrastructure. However in the short to medium term, this is not realistic—such infrastructure support will take a long time to put in place. Nor is it necessary, so long as results data will be available only to TAAs, who themselves do not have any established SIF capability.

For these reasons an interim measure is proposed, it is expected that the extracts will be made available via a manual selection interface in the National Assessment Platform. A list of schools that the TAA is responsible for will be presented and the TAA can select; a) one school; b) many schools; or c) all schools.

- The extract will deliver all the objects/entities via XML.
- All results objects will be wrapped within a single <NAPResultsReporting> wrapper tag.
- The results data may incorporate binary data, such as script images or exemplar items. Rather than include such data as blobs in the result data XML, it is preferable for the XML to reference such data as external files, through a URL or through a filename reference to a separately distributed file archive.
- NSIP is prepared to assist TAAs in consuming SIF formatted files into their existing systems, through its NIAS toolset.

6. Results and Reporting Data Set – Specifications

Refer to *"Online NAPLAN Reporting DataSet 1.9.xlsx"*

Online NAPLAN Reporting DataSet 1 9

6.1 Student Results Export File/s– XML:

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