EARL Validation Rules

User Guide

Table of Contents

Appendices

Table of Figures

Table of tables

1 Introduction

1.1 Background

All survey plans submitted to the Department of Natural Resources and Mines (the department) are examined for completeness and correctness using a set of business rules compiled from legislative requirements and departmental policies and procedures. The rules for validation and the application of departmental policy and procedures have been codified and documented to standardise the application of the rules across regional centres.

Plans that are lodged for registration in the Land Registry are subject to a more extensive examination than those that are lodged for survey records only.

Historically, survey information has been submitted to the department largely on a paper based plan of survey. Information from paper plans requires manual validation and subsequent entry into the various information systems used by the department to maintain survey information.

Stage one of Electronic Access for Registry Lodgement (EARL), the Survey Information Processing (SIP) project, developed a tool used internally within the department to digitally capture the information on a survey plan. It also partially automated validation of the digital Cadastral Information Files (CIFs, which are a digital representation of a paper survey plan) generated by the departments SIP data capture process.

Stage two of the EARL project (EARL II) developed a validation tool that will be applied to CIFs that are submitted to the department by external entities as a component of the digital lodgement of survey plans process.

Validation of the digital survey data within a CIF can be divided into the following logical components:

1. Automatic internal validation checks of the file structure, completeness with respect to mandatory and optional fields and the logical interactions between these fields.

2. Automatic external validation checks of file content against data held in the department's spatial and titling databases.

3. Manual validation checks for items that require subjective assessment and that cannot be completed satisfactorily by the validation service at this time.

The product of the automated validation of a CIF is a validation report that indicates the outcome from the application of the validation rules to the CIF.

1.2 Purpose

The purpose of this document is to provide a description of the validation rules that are used by the CIF validation service. This is intended to aid surveyors and other spatial information professionals in understanding a validation report provided as output of the department's CIF validation process.

1.3 Scope

This document will describe the validation rules that are applied to CIFs submitted to the department's validation service. It details how the rules are applied (automatically or manually), the actions required to overcome non–compliance and the validation report layout.

1.4 Structure

1.4.1 Conventions

In this document, rules have been ordered according to category, rather than presented in sequential order. Refer to Appendix G for an index of the rules presented in sequential order.

The term "CIF" can be interpreted generally as meaning an electronic version of a plan.

Data to be extracted from a source and inserted into messages is indicated using angled brackets (<…>), e.g. § 3.1.3.1.1 has a reason of:

> "Action statement '<Action statement type in CIF>' requires Head of Power <related Head of Power>."

The intended meaning is to insert the action statement type from the CIF in the first part of the message and the required Head of Power in the second part of the message.

References are provided to ePlan elements where possible, where this is not possible references are given to LandXML elements as currently implemented by the departments CIF format.

Some rule numbers from the sequence are missing. This has occurred due to later rules superceding earlier ones and in some cases the number being assigned to functionality intended for inclusion in a future release of EARL.

1.4.2 Sections

This document contains the following sections:

- Validate CIF Service Overview
  - o Defines important concepts and terms.
  - o Provides an overview of the transaction areas and transactions within the system.
  - o Describes how the system relates to digital survey information lodgement.
- Technical Requirements—the rules applied to a CIF during validation are specified and a description is given for each rule.
- Notes—assistance with various aspects of the rules, such as rounding, allocations, part parcels, etc.

1.5 Audience

This document is intended to be used by surveyors and other spatial information professionals as a resource to support the usage of the CIF validation service within the department's EARL initiative.

1.6 References

1. DNRM, *Registrar of Titles Directions for the Preparation of Plans,* 28 February 2013
    http://www.nrm.qld.gov.au/property/titles/rdpp/pdf/rdpp.pdf

2. DNRM, *Cadastral Survey Requirements*, version 6.0, 1 August 2010,
    http://www.nrm.qld.gov.au/property/surveying/pdf/cadastral-survey-requirements.pdf

3. Queensland Spatial Information Council, QSIC Parcel Identification Standard, October, 2012
    https://datasmart.oesr.qld.gov.au/Events/datasmart.nsf/0/2737E335FB27A53B4A257AB6
    00197D31/$FILE/QSIC%20Parcel%20Identification%20Standard%20(October_2012).pdf
    ?openelement

4. DNRM, *ePlan Protocol, Queensland LandXML Mapping*, 2010
    http://icsm.govspace.gov.au/files/2011/09/ePlan-Protocol-LandXML-Mapping-Qld1.doc

1.7 Definitions

A glossary is included at Appendix A. Please refer to references 1 and 2 above for additional definitions that are not contained within the glossary.

The following terms are important for interpretation of the validation rules.

Certification date
>   This is ordinarily the date of the Form 13 or 18 on the survey plan. For a CIF in LandXML format, it is the value of the attribute: LandXML/Survey/SurveyHeader@submissionDate is used, which is the date that the CIF was submitted to the department.

Subject lot
>   For the purpose of this document, a subject lot is a lot (see Appendix A, #97) that is created by the survey.
>   For example in a description "Plan of Lots 3 to 5 on SP812345 cancelling Lot 4 on RP543218", then lots 3, 4 and 5 on SP 812345 are the subject lots.

Subject parcel
>   As for subject lot but relating to parcel (see Appendix A, #111). A parcel defines the spatial extent of an interest, such as part of a lot (e.g. a lot in parts is one lot but multiple parcels), secondary interest or road parcel (see Appendix A, #154).

Survey date
>   This is the date that the survey was performed, which is usually before the certification date. This date is in the survey certificate and the certificate surveyDate attribute: LandXML/Survey/SurveyHeader/SurveyorCertificate@surveyDate.

2 Validate CIF Service Overview

2.1 Purpose

The validate CIF service validates the format of a cadastral information file and the information contained within it. The purpose of validation is to check the contents of the file against a set of rules and create a validation report. The report, along with the CIF, is used in subsequent business processes (e.g. the verify component of the submit CIF process uses the validation report to determine whether or not the department will accept the CIF).

Validation has following components:

- Protocol Check
- Internal validation
- External validation
- Validation report

The protocol check, internal and external validation rule sets are run in sequence to produce a validation report.

2.2 Process Flow

Figure 1 shows how the processing within the validation application occurs.
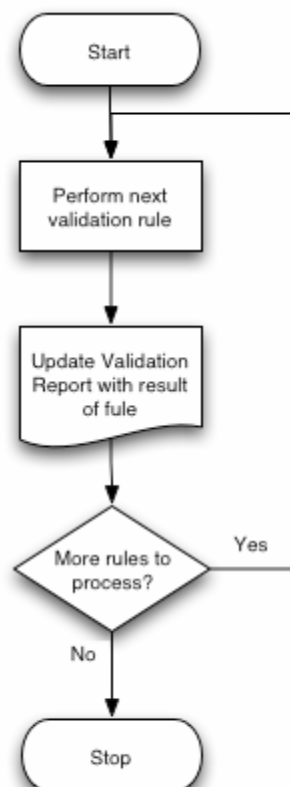
Figure 1: Validation rule process flow

A process flow of the submit plan process is included in Appendix B. The basic process is:

1. A surveyor generates a CIF.

2. The CIF is checked against all the automated validation rules and a CIF validation report is produced. The validation check may stop and a validation report returned after any stage of the validation where a fatal error has occurred. For example validation will halt after the protocol check or the internal rule component, if a fatal error is discovered. When a fatal error occurs before all validation components are complete, the surveyor should rectify the cause of the error and recommence the validation process.

3. The validation report is returned to the surveyor.

4. If the validation report includes any exception errors, the surveyor may, for each exception, either:

   a. modify the CIF so that the exception does not occur

   b. add a comment to the report to explain why the exception is acceptable

   c. take no action and address the exception at a later stage.

5. If the validation report includes any fatal exceptions, these must be addressed before the CIF can be submitted.

6. The CIF and the validation report are submitted.

2.3 Protocol Check

The protocol check rule VR000 (§ 3.1.1.1.1) always runs as the first step of the validation process. The protocol check rule validates the CIF file format, and that the CIF is compliant to the LandXML standard, and also that it satisfies the ePlan schema with regard to mandatory and optional data fields.

2.4 Internal Validation

Internal validation checks (§ 3.1) are based on data contained within the CIF (i.e. internal to the CIF) and check the logical interactions of data between various elements and attributes.

2.5 External Validation

External validation checks (§ 3.2) are based on data held in the department's spatial and titling databases, i.e. external to the CIF, and check that the file content is consistent with data held by the department.

2.6 Validation Report

A validation report is generated during the validation process. The report is in XML format and contains information for each rule, stating whether it has passed or has an error (see § 2.9). The report can be annotated by the document submitter and by department staff as part of the validation and assessment process. When submitted to the department, the validation report is stored with the CIF.

The layout of the validation report is shown in Figure 2.
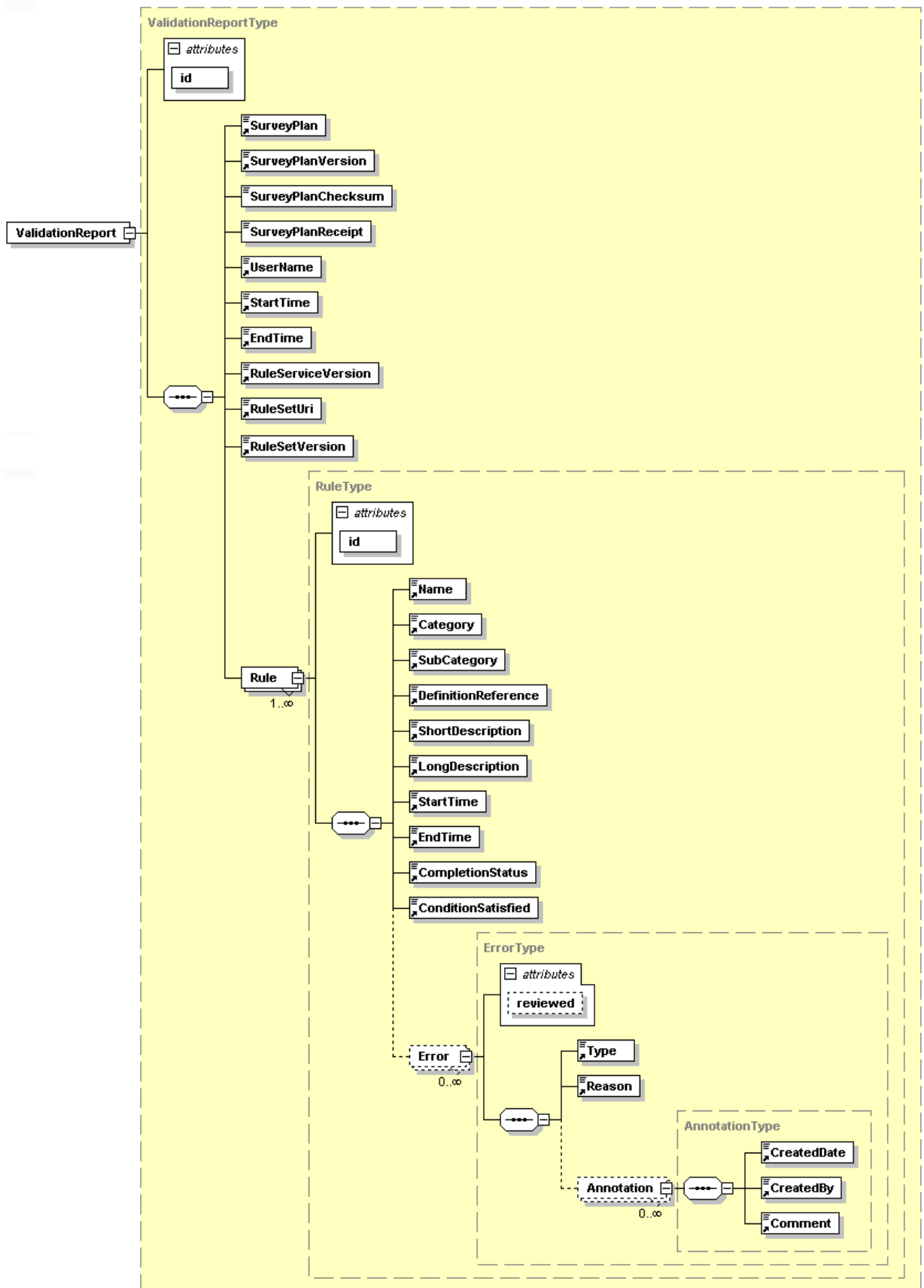
Figure 2: Validation report—layout

The table below describes the elements of the validation report.

Table 1: Validation report elements

#	Field Name	Description	Format
Header information			
1.	ValidationReport@id	Report ID—unique ID for the validation report	string
2.	SurveyPlan	Survey plan number from the related CIF	alpha (10)
3.	SurveyPlanVersion	Version of the plan relating to this report from the related CIF	single
4.	SurveyPlanChecksum	The checksum of the CIF when it was validated	string
5.	SurveyPlanReceipt	The receipt number issued if the CIF was successfully submitted	string
6.	UserName	User who produced the report	alpha (20)
7.	StartTime	Time and date that the report was initiated	time:date
8.	EndTime	Time and date that the report was completed	time:date
9.	RuleServiceVersion	The version number for the rule service	single
10.	RuleSetUri	The URI of the validation service used	string
11.	RuleSetVersion	The version of the rule set used	single
For each rule that has been processed the following elements are supplied			
12.	Rule@id	Unique ID for the rule	string
13.	Name	The code name for the rule (e.g. VR100)	alpha(7)
14.	Category	Whether the rule is: 1. Internal (§ 2.4) 2. External (§ 2.5)	Alpha(8)
15.	SubCategory	The subcategory of the check (e.g. allocations)	Alpha(30)
16.	DefinitionReference	The heading number for the rule from this document	Alpha(20)
17.	ShortDescription	A short name for the rule	Alpha(30)
18.	LongDescription	A full description of the rule and its purpose	Alpha(250)
19.	StartTime	The time and date that processing started for the rule	Time:date
20.	EndTime	The time and date that processing ended for the rule	Time:date
21.	CompletionStatus	The result of applying the rule (see § 2.8)	Alpha(15)
22.	ConditionSatisfied	Indicates if the condition has been met	Boolean
Each Rule may generate one or more errors			
23.	Error@reviewed	Indicates if the error has been reviewed by DNRM	Boolean
24.	Type	The type of error (see § 2.9).	Alpha(20)
25.	Reason	A text message about the reason for the error.	Alpha(250)
For every error a user can add an annotation to explain the reason for failure			
26.	CreatedDate	The date the annotation was added	Time:date
27.	CreatedBy	The user adding the annotation, usually the submitter or assessing surveyor	Alpha(25)
28.	Comment	Comment text	Alpha(250)

2.7 Validation Rule Types

There are the following rule types:

1. Mandatory—the rule is applied in all cases
2. Conditional—the rule is applied only if certain conditions are met.

2.8 Completion status

The result of running a rule is a completion status, which is one of:

1. Passed—the conditions of the rule were met
2. Failed—the conditions of the rule were not met
3. NotApplicable—for a conditional rule, the condition required to apply the rule was not met
4. SystemError—the system was unable to check the rule.

2.9 Validation Error Types

Each validation rule ends with a completion status, if the completion status is a value other than passed or not applicable, an error is generated. The error type indicates the action to be taken to resolve the error and may affect subsequent processing.

Validation may stop before the entire CIF has been processed if a fatal error is found after application of the primary internal validation rule VR000, or after completion of the remaining internal validation rules.

The outcome of validation affects whether the CIF will be accepted when submitted.

2.9.1 Fatal

A fatal error indicates that the CIF would not be accepted if submitted in its current state. If validation continues after a fatal error, subsequent results may be unreliable as a consequence of the condition that caused the error.

When the outcome is fatal:

1. CompletionStatus is set to "Failed"
2. Error type is set to "Fatal"
3. ConditionSatisfied is set to "false".

2.9.2 Exception

An exception error indicates that the rule has not passed and that a manual examination may be undertaken to check the rule. An exception error may cause subsequent exception errors but should not cause fatal errors during automatic validation.

Exception errors are checked during subsequent processes. In general, each exception should have an accompanying note when the CIF and validation report are submitted. An assessor may add comments to the validation report regarding the error.

Where an exception is specified:

1. CompletionStatus is set to "Failed"
2. Error type is set to "Exception"
3. ConditionSatisfied is set to "false".

2.9.3 Manual Check

Where one or more manual check errors have occurred, the survey and the associated validation report will be manually assessed by the department. The assessor may add comments to the report regarding the error.

Where a manual check is specified:

1. CompletionStatus is set to "Failed"
2. Error type is set to "Manual Check"
3. ConditionSatisfied is set to "false".

2.10 Verification Rules

The verification rules are another rule set used by the department but these are not part of the CIF validation process. The verification rules are applied at the time a CIF is submitted to the department along with a satisfactory validation report. The verification rules (§ 3.3) check the validity of the submitted CIF, the authority of the person submitting the file and the currency date at the time the file is submitted. Verification rules are only executed at the plan submission stage. They are not part of the validation process or included in the validation report.

3 Technical Requirements

Each validation rule has the following information:

- **Classification**
  Validation—the rule is used for validation
  Note—the rule is for information only

- **Mandatory** (Rule Type, see § 2.7)
  Y—Mandatory rules are applied in all cases
  N—the rules is only applied if some condition is met

- **QLD Specific**
  Y—indicates that the rule applies only within the jurisdiction of the State of Queensland
  N—applies in other jurisdictions

- **Error Type**
  Indicates the type of error that results if the test fails (see § 2.9)

- **Checked By**
  For exceptions and manual check, indicates the authority responsible for checking the error. It is not applicable to fatal errors.

- **Reason**
  The reason text that is included in the validation report if the CompletionStatus is not Passed (see Figure 2, ValidationReport:Rule:Error:Reason). The reason explains why the error occurred.

3.1 Internal Validation Rules

All of the checks in this section are performed using data within the CIF.

3.1.1   Integrity of the CIF

3.1.1.1.1   Protocol Check — VR000

Protocol check is the primary rule of the validation process. It checks that a CIF is valid XML, is valid LandXML and conforms to the departments requirements for a CIF file. It checks that mandatory attribute values are not empty and are valid enumerations where applicable. It checks any conditional attributes, uniqueness constraints and the action statement structure.

A fatal error generated by this rule will cause the validation process to cease, and the remaining internal rules and subsequent external rule category will not be applied. A validation report will be generated containing notification of the failure of rule VR000 and the reason.

Rule:
1. Checks that the CIF is valid XML.

2. Validate the CIF against the schema:
   - Check the CIF against LandXML 1.2 schema
   - Check the CIF against modified LandXML schema to check aspects that apply only to the ePlan model adapted by Queensland.
     - Check attribute values are valid enumerations
     - Check required elements are present
     - Check required attributes that do not have enumerations are not empty
     - Check that all pclRef attribute values match a LandXML/Parcels/Parcel/@name

- o Check that all pntRef attribute values match a
  LandXML/CgPoints/Cgpoint/@name
- o Check that all coordGeomRefs attribute values match a
  LandXML/Parcels/Parcel/CoordGeom/@name
- o Check that observation IDs (setupID, targetSetupID, targetSetup2ID) match a
  LandXML/Survey/InstrumentSetup@id
3. Further validate CIF attribute values:

- Check conditional attributes
- Check administrative area details
- Check all action statements in the CIF have the correct structure.

ePlan element

Refer to Appendix H for elements affected by this rule and also reference 4 - *ePlan Protocol, Queensland LandXML Mapping* for the Queensland schema.

Reason
1. "The survey CIF is not valid XML"

2. "The survey CIF is not valid LandXML: <Error message>"

3. "The survey CIF does not conform to the QLD ePlan model:: <Error message>"

4. Refer to Appendix H for specific error messages given relating to attribute value validation by VR000.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	DNRM

3.1.2   Purpose of Survey

3.1.2.1   *General*

3.1.2.1.1   *Purpose of survey—VR001*

Rule:

A survey must have at least one purpose of survey and may have multiple purposes. If multiple, each purpose of a survey must be consistent with the other purposes.

Additional rules, permitted values and reasons are detailed in Table 2 below.

ePlan element

Document:SurveyDocument:SurveyHeader:surveyPurpose
LandXML/Survey/SurveyHeader@surveyPurpose

Reason

"A purpose of survey is required."

Table 2: Values and rules for purpose of survey

#	Purpose of Survey	Type of Purpose	Rule
1.	Subdivision Amalgamation	Primary Type 1	If a survey has a Primary Type 1 Purpose: 1. It must not have another Primary Type 1 Purpose Reason: "A survey may only have one Primary Type 1 Purpose" 2. At least one parcel of class "Road", "Lot" or "Common Property" must be created Reason: "A survey with a purpose of '<surveyPurpose in CIF>' must create a parcel of class Road, Lot or Common Property."
2.	Resurvey	Primary Type 2	If a survey has a Primary Type 2 purpose then: 1. At least one parcel of class "Lot", "Road" or "Common Property" must be created Reason: "A survey with a purpose of '<surveyPurpose in CIF>' must create a parcel of class Road, Lot or Common Property." 2. It must not have any other primary purpose Reason: "A survey with a purpose of '<survey purpose in CIF>' must not have another primary purpose."
3.	Permit	Primary Type 3	If a survey has a Primary Type 3 purpose: 1. It must not have any other purpose Reason: "A survey with a '<surveyPurpose in CIF>' must not have any other purpose" 2. A parcel with a class the same as the purpose must also appear in the plan Reason: "A survey with a purpose of '<surveyPurpose in CIF>' must include a parcel with a class of '<surveyPurpose in CIF>'."

Table 2: Values and rules for purpose of survey

#	Purpose of Survey	Type of Purpose	Rule
4.	Easement Covenant Lease Profit a Prendre	Secondary Type 1	If a survey has a Secondary Type 1 purpose: 1. For each Secondary Type 1 purpose, a parcel with the same class and a state of created must appear in the plan Reason—for each missing parcel class: "A parcel with a class of '<surveyPurpose in CIF>' must be part of the survey"
5.	Identification	Secondary Type 2	If a survey has a Secondary Type 2 purpose: 1. It must not have any other purpose Reason: "A survey with a purpose of '<surveyPurpose in CIF>' must not have any other purpose." 2. The survey must not create or extinguish any parcels Reason: "A survey with a purpose of '<surveyPurpose in CIF>' must not create new parcels." 3. The surveyStatus must be "Survey Records Only" Reason: "A survey with a purpose of '<surveyPurpose in CIF>' must have a status of Survey Records Only."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	N	Exception	DNRM

3.1.3   Fitness for Purpose

The proposed actions of a plan must be undertaken using an appropriate Head of Power. Also, the Head of Power determines the action statements that can or must be used.

3.1.3.1   *Plan Suitable for Actions*

3.1.3.1.1   *Action statements—VR004*

Action statements are stored as an annotation type in the CIF; the type attribute has a value of the action statement type (see Appendix C).

Rule

For each action statement included in the plan:

1. The action statement type must be a valid action statement type

2. The related Head of Power must be included in the HeadOfPower element (see Appendix C).

ePlan element

Action statement:
Document:SurveyDocument:Annotation
LandXML/Survey/SurveyHeader/Annotation@type=<annotation type>

Head of Power:
Document:SurveyDocument:HeadOfPower
LandXML/Survey/SurveyHeader/HeadOfPower

Reason

"Action statement '<Action statement type in CIF>' requires Head of Power <related Head of Power>."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.1.4   Format of Plan

3.1.4.1   General

3.1.4.1.1   Check Explanatory Plan—VR006

Rule

If the plan format is explanatory, a manual check is required.

ePlan element

Document:SurveyDocument:surveyFormat
LandXML/Survey/SurveyHeader@surveyFormat

Reason

"The plan has a format of '<plan format in CIF>', a manual check is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Manual Check	DNRM

3.1.5   Plan Description

3.1.5.1   General

These sections cover the consistency of created and affected lots, for example extinguished previous parcels are checked by VR026 (§ 3.1.7.1.1).

3.1.5.1.1   Survey Title Block—VR008

This description must be consistent with the actions of the survey. This rule checks that the description is syntactically correct and extracts the survey actions.

Rule

The plan description must state the actions proposed by the plan, e.g. the parcels to be created, affected or cancelled.

Note: this rule has been implemented to parse the plan description and extract the plan actions. The extracted data is used by other validation rules.

ePlan element

Document:SurveyDocument:Survey:surveyDesc
LandXML/Survey/SurveyHeader@desc

Reason

None.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	DNRM

3.1.5.1.2   *Consistency of plan description (Created Parcels)—VR009*

This rule checks that new parcels exist in the plan, rule VR070 (§ 3.1.15.6.1) checks the spatial extent of new parcels.

Rule

1. Each lot identified in the plan description as being created must have an equivalent parcel in the plan that is being created (i.e. parcel state is "created") except for parcels with a class of road and hydrography.

2. Each lot created in the plan (i.e. parcel state is "created") must appear as created in the description except for parcels with a class of road and hydrography.

ePlan element

Description:
Document:SurveyDocument:Survey:surveyDesc
LandXML/Survey/SurveyHeader@desc

Parcels:
Document:SurveyDocument:Survey:Parcel:Parcel:parcelState
LandXML/Parcels/Parcel@state

Reason

1. For each lot in the plan description that is not in the plan:
"Plan Description identified '<parcel identifier>' as being created but the created parcel could not be found in the file."

2. For each created lot in the plan that is not included in the description:
"Parcel '<parcel identifier>' is not contained in the Plan Description."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.5.1.3   *Consistency of plan description (Affected Lots)—VR010*

For each affected parcel identified in the plan description, a parcel with a state of affected with the same parcel identifier must exist in the file.

Rule

For each lot identified in the plan description as being affected, the plan must contain an equivalent parcel that is affected (i.e. parcel state is "affected").

ePlan element

Description:
Document:SurveyDocument:Survey:surveyDesc
LandXML/Survey/SurveyHeader@desc

Parcels:
Document:SurveyDocument:Survey:Parcel:Parcel:parcelState
LandXML/Parcels/Parcel@state

Reason

For each lot in the plan description that is not in the plan:
"Affected parcel '<parcel identifier in CIF>' in description is not in plan."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.5.1.4   Consistency of affected parcels—VR012

Identify all parcels with a state of affected in the file; these parcels should have at least one allocation to a parcel with a state of created. Note that affected parcels do not always appear in the plan description. This rule is similar to VR028 (§ 3.1.7.1.2). See also § 4.6.2.

Note that the following exceptions apply to this rule. An affected parcel has no allocations where:

1. The purpose of survey is identification

2. The affected parcel is an original grant parcel and:
   a.   the extinguished parcel is fully converted to road and;
   b.   the original grant is not affected by any other parcel.

Rule

Each affected parcel in the survey (i.e. state= "Affected"):

1.   must have an allocation to a parcel with a state of created

2.   must only allocate to created parcels

3.   must not allocate to parcels with a parcel type of "part".

ePlan element

Description:
Document:SurveyDocument:Survey:surveyDesc
LandXML/Survey/SurveyHeader@desc

Document:SurveyDocument:Survey:purposeOfSurvey
LandXML/Survey/SurveyHeader@surveyPurpose

Parcels:
Document:SurveyDocument:Survey:Parcel:Parcel:parcelState
LandXML/Parcels/Parcel@state

Reason

1. For each affected parcel that does not allocate to a created parcel:
   "Parcel '<reference to affected parcel in CIF>' has state of '<parcel state>' but does not have an allocation to a created parcel."

2. For each incorrect allocation to a parcel that does not have a state of created:
   " Parcel '<affected parcel reference in CIF>' has an allocation to '<parcel allocated to>' that does not have a state of '<createdStateType>'."

3. For each incorrect allocation to a part parcel:
   " Parcel '<affected parcel reference in CIF>' has an allocation to '<parcel allocated to>' that has a parcel type of '<parcelType>'."

4. For each part parcel that has allocation to a parcel other than a parcel with class "Administrative Area":
   "Part parcel '<reference to affected part parcel in CIF>' has allocations which are not allowed. Allocations should be done from the multipart parent parcel.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.5.1.5 Created parcels allocation—VR253

This rule is the equivalent of VR028 (§ 3.1.7.1.2) for extinguished parcels.

Rule

Created primary interests:

1. must have an allocation from an extinguished primary interest

2. can only allocate to created secondary interests

3. can only allocate to parcels with a type of "multipart" or "single".

ePlan element

Parcel::Parcel:Parcel
LandXML/Parcels/Parcel/Parcels/Parcel@pclRef

Reason

1. For each created primary parcel that does not have an allocation from an extinguished parcel:
   "Parcel '<parcel identifier in CIF>' has a state of '<state in CIF>' but does not have an allocation from an '<parcelStateType_extinguished>' parcel."

2. For each incorrect allocation from a parcel with a state of created:
   "Parcel <parcel identifier in CIF> with state '<parcel state in CIF>' allocates to '<parcel identifier in CIF>' which is a primary interest."

3. For each incorrect allocation to a parcel type other than multipart or single:
   "Parcel '<allocated from parcel identifier in CIF>' allocates to '<allocated to parcel identifier in CIF>' that is type <parcel type in CIF>' but can only allocate to '<parcelType_multipart>' or '<parcelType_single>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.6 Parcel Identifier

3.1.6.1 Primary Parcel (Lot)

A primary parcel is identified by its topology, which is dependent on its class (see Appendix D). Examples of primary parcels include (but are not limited to) parcels with a class of lot, road and common property.

3.1.6.1.1 Primary parcel identifier—VR019

Rule

1. A parcel that has a parcel class of "lot" (see Appendix D) must have a numeric identifier.

2. The lot number must not be repeated within a survey plan (i.e. the lot:plan combination must be unique) unless it is defined as a part lot.

3. The lot number must conform to the Parcel Identifier Standard (Ref. 3).

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:[class, name, parcelType]
LandXML/parcels/parcel@[class, name, parcelType]

Reason

1. "Parcel '<lot:plan in CIF>' has a class of '<class in CIF>' and must have a numeric identifier."

2. "Lot number '<lot:plan in CIF>' is not unique for the plan and is not a part lot."

3. "The format of lot number '<lot:plan in CIF>' is not valid."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.6.2 Secondary Parcel

3.1.6.2.1 Secondary parcel identifier—VR023

Secondary parcels are indicated by their topology, which is dependent on their class (see Appendix D).

This rule is similar to that for *Primary parcel* identifier—VR019 (§ 3.1.6.1.1), the reason text for both rules should be kept consistent. Also see VR202 (§ 3.2.4.3.1).

Note that a lease on crown land may have a numeric identifier, the plan description may be like (from SP223361): "Plan of Lots B, C and D in Lot 433 on WD5860".

These descriptions are added to a CIF as: "Plan of Lease [Lots] B, C and D in Lot 433 on WD5860".

Rule

1. A parcel that has a parcel topology of "secondary" must have a valid identifier, i.e. it must:

   a. be one or more alpha characters

   b. be unique for the plan number

   c. conform to the Parcel Identifier Standard (Ref. 3).

2. Created secondary parcels may not be defined in parts (see also § 3.2.4.3.1 *New secondary parcel identifier—VR202*).

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:name
LandXML/parcels/parcel@name

Reason

1. See also VR019 (§ 3.1.6.1.1):

    a. "Secondary parcels must have an identifier of one or more letters (A—Z)."

    b. "The lot identifier for parcel '<Parcel Name>' is not unique."

    c. "The lot identifier format is invalid."

2. "Secondary interest parcel '<Parcel Name>' is a part lot which is not allowed."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.6.3 Parcel Identifier Metadata

3.1.6.3.1 Parcel metadata (format, class and use for each parcel)—VR024

Rule

A parcel must have a valid Parcel Format, Class and Use as specified in Appendix D.

This rule combines and implements the following rules:

1. Parcel Class - The parcel class attribute must be consistent with the parcel format; valid combinations are listed in Appendix D.

2. Parcel Topology - Parcels must have a valid parcel topology. Parcel topology is calculated from the class (see Appendix D), therefore provided it has a valid class, it must have a valid topology.

3. Primary parcel (lot) (use of parcel) - A primary parcel (e.g. lot) may be required to have a valid "use of parcel" depending on the head of power and the actions being carried out by the survey. Refer to Appendix D for the list of valid "Use of Parcel" and Appendix C for Head of Power and actions.

4. Public Use Land (use of parcel) - Where a primary parcel (lot) has the use of parcel identified as "public use land", the qualifying "use of parcel" must be one of those listed in Appendix D as a valid "Use of Parcel" for public use land.

ePlan element

1. Document:SurveyDocument:Survey:Parcel:Parcel:class
LandXML/Parcels/Parcel@class

2. Topology is not an element or attribute in the ePlan model.

3. Document:SurveyDocument:Survey:Parcel:Parcel:useOfParcel
LandXML/Parcels/Parcel@useOfParcel

4. Document:SurveyDocument:Survey:Parcel:Parcel:useOfParcel
LandXML/Parcels/Parcel@useOfParcel

Reason

1. For each parcel where the class is inconsistent with the format:
    "Parcel '<parcel reference in CIF>' has a class of '<parcel class in CIF>' that is not consistent with its format of '<parcel parcelFormat in CIF>'."

2. None

3. "The use of parcel '<use of parcel in CIF>' is not consistent with the Head of Power '<head of power in CIF>' and survey actions."

4. "The use of parcel '<use of parcel in CIF>' is not consistent with the qualifying use of parcel '<qualifying use of parcel in CIF>' for a primary parcel."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.7 Previous Plan Description

3.1.7.1 General

3.1.7.1.1 Consistency of previous plan description—VR026

The previous plan description identifies the lots being extinguished. The file must have an extinguished parcel record for each extinguished parcel.

Rule

An extinguished parcel must appear in the plan for each extinguished parcel in the plan description.

All parcels in the file with a state of extinguished must be contained within the previous plan description.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:state
LandXML/Parcels/Parcel@state

Reason

For each extinguished parcel in the plan description that is not in the plan:

"Extinguished parcel '<parcel identifier in CIF>' in the previous plan description is not in the plan."

For each extinguished parcel in the plan that is not in the previous plan description:

"Extinguished parcel '<parcel identifier in CIF>' in the plan is not in the previous plan description."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.7.1.2 Allocation of extinguished parcels—VR028

Note: if an extinguished parcel allocates to a parcel that is not in the CIF, it will fail VR066 (§ 3.1.15.4.1)

Rule

1. Extinguished parcels must have at least one allocation to a parcel with a state of created.

2. All parcels that an extinguished parcel allocates to must have a state of created.

3. Extinguished parcels must not allocate to part parcels.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:state
LandXML/Parcels/Parcel@state

Reason

1. For each extinguished parcel that does not link to a created parcel:
"Parcel <parcel identifier in CIF> has a state of <state in CIF> but does not have an allocation to a created parcel."

2. For each allocated parcel that does not have a state of created:
" Parcel <parcel identifier in CIF> allocates to <parcel identifier in CIF> that does not have a state of '<createdStateType>'."

3. For each extinguished parcels that allocates to a part parcel:
" Parcel <parcel identifier in CIF> allocates to a part parcel, which is not allowed."

4. For each part parcel that has allocation to parcel other than parcel with class "Administrative Area":

"Part parcel '<reference to affected part parcel in CIF>' has allocations which is not allowed. Allocations should be done from the multipart parent parcel.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.8 Previous Title

3.1.8.1 Cancelling Clause

3.1.8.1.1 Check cancelled undescribed balance—VR029

Rule

If a parcel in the cancelling clause is described as a balance, then a manual validation must be performed.

ePlan element

Document:SurveyDocument:Survey:surveyDesc
LandXML/Survey/SurveyHeader@desc

Reason

"Lot '<parcel reference in CIF>' is a balance lot in the cancelling clause, a manual check is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Manual	DNRM

3.1.9 Parish and County

3.1.9.1 General

In the following rules, the parish and county for a multipart lot is an attribute of the parcels that are the parts of the lot. Note that the date for validating parish and county is the submission date; therefore digital surveys always include a submission date for validation purposes.

3.1.9.1.1 Parish—VR031

Rule
1. A plan must have at least one parish.
2. Each parish name must be listed in the Queensland Parish/County Directory that was in force on the date that the plan was certified.
3. The parish must be in the county that is stated in the plan.

ePlan element
Plan:
Document:SurveyDocument:AdministrativeArea:adminAreaName
  where: adminAreaType='Parish'
LandXML/Survey/SurveyHeader/AdministrativeArea@adminAreaName
  where: @adminAreaType='Parish'

Reason
1. "The CIF must have a parish."
2. "The parish '<parish in CIF>' was not listed in the Queensland Parish/County Directory on the date that the plan was certified."
3. "The parish '<parish in CIF>' is in county '<county in ref data>' which is not in the CIF."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.9.1.2 County—VR032

Rule
1. A plan must have at least one county.
2. The county must be listed in the Queensland Parish/County Directory that was in force on the date that the plan was certified.

ePlan element
Plan:
Document:SurveyDocument:AdministrativeArea:adminAreaName
  where: adminAreaType='County'
LandXML/Survey/SurveyHeader/AdministrativeArea@adminAreaName
  where: @adminAreaType='County'

Reason
1. "The survey CIF is missing the adminAreaType='County' attribute for the AdministrativeArea element."
2. "The 'County' Name/Code combination (' Name<county in CIF>'/'code') was not found in the department's reference data."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.10 Local Authority

3.1.10.1 General

The certification date is the date of the Form 13 or 18 on a conventional paper based survey plan. For the purpose of validating a CIF in LandXML format, the value of the attribute: <LandXML/Survey/SurveyHeader@submissionDate> is used, which is the date that the CIF was submitted to the department.

3.1.10.1.1 Local Government—VR033

The local authority must be from the list of local authorities defined in the QSIC Standard.

Rule
1. The plan must have at least one local authority.

2. The local authority must be an existing local authority on the date that the plan was certified.

ePlan element
Plan:
Document:SurveyDocument:AdministrativeArea:adminAreaName
  where: adminAreaType='Local Government Area'
LandXML/Survey/SurveyHeader/AdministrativeArea@adminAreaName
  where: @adminAreaType='Local Government Area'

Reason
1. "The CIF must have a local authority."

2. "The 'Local Government Area' Name/Code combination ('<local authority in CIF>'/'<code>') was not found in the Department's reference data.."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.11 Locality

3.1.11.1 General

The certification date is the date of the Form 13 or 18 on a conventional paper based survey plan. For the purpose of validating a CIF in LandXML format, the value of the attribute: LandXML/Survey/SurveyHeader@submissionDate is used, which is the date that the CIF was submitted to the department.

Locality names are managed in the DNRM Place Names database.

Rule
1. The CIF must have at least one locality.

2. The locality must be an existing locality on the date that the plan was certified.

3. The locality must be in the local authority stated in the CIF.

ePlan element
Plan:
Document:SurveyDocument:AdministrativeArea:adminAreaName
  where: adminAreaType='Locality'
LandXML/Survey/SurveyHeader/AdministrativeArea@adminAreaName
  where: @adminAreaType='Locality'

Reason
1. "The CIF must have a locality."

2. "The locality '<locality in CIF>' was not a locality on the date the plan was certified."

3. "The locality '<locality in CIF>' was not listed as within local authority '<local authority in CIF>' on the date that the plan was certified."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.12   Mining District

3.1.12.1   General

Note that the date for validating mining district is the submission date; therefore digital surveys should always include a submission date for validation purposes.

3.1.12.1.1   Mining district—VR035

If the Head of Power is "*Mineral Resources Act 1989*", the mining district must be present, otherwise it is optional.

If present it must be a valid mining district. Mining district boundaries are included in the administrative boundaries supplied in a cadastral infrastructure search.

Rule
1. If the Head of Power is "*Mineral Resources Act 1989*", the survey must also contain a Mining District, otherwise Mining District is optional.

2. Where a Mining District is included, it must be valid for the date that the plan was certified

ePlan element

Document:SurveyDocument:AdministrativeArea:adminAreaName
  where: adminAreaType='Mining District'
LandXML/Survey/SurveyHeader/AdministrativeArea@adminAreaName
  where: @adminAreaType='Mining District'

Reason
1. "When the Head of Power is '<head of power in CIF>', a mining district must be stated."

2. "The mining district '<mining district in CIF>' was not valid on the submission date <date of submission in CIF>."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.1.13 Surveyors Certification

3.1.13.1 General

3.1.13.1.1 Correct certificate—VR036

The plan must have a Surveyor's Certificate (Form 14 or Form 19 are those applicable for a CIF file and associated registration view visualisation) and the wording must comply with the details in ref. 2, § 3.9. See also VR058 (§ 3.1.14.4.1) which checks that the correct certificate has been used.

Rule
1. The plan must have one current Surveyor's Certificate, which may be either be Form 13, Form 14, Form 18, Form 19 or Explanatory.

2. The certificate must comply with the rules described in Ref. 2, § 3.9.

3. If the certificate is Form 13 or Form 14:

    a. the survey date in the certificate text must be a valid date

    b. the survey date in the certificate text must match the survey date attribute.

4. The certification date (see § 1.7 Definitions) must be a valid date.

5. The certification date must be on or after the survey date (if there is one).

6. If the surveying entity is a Corporation, the certificate must contain an ABN/ACN.

7. The entities listed in the certificate must match the entities in the personnel elements in the CIF, i.e.:

    a. each entity listed in the certificate must have a corresponding personnel element

    b. each entity listed in a personnel element must also be noted in the certificate.

8. Explanatory format plans must have an explanatory certificate.

ePlan element

Surveyor:SurveyorCertificate

Survey date:
LandXML/Survey/SurveyHeader/SurveyorCertificate@surveyDate
(also in the certificate as free text)

Certificate type and certification date:
LandXML/Survey/SurveyHeader/SurveyorCertificate@certificateType
LandXML/Survey/SurveyHeader@submissionDate

Personnel details:
LandXML/Survey/SurveyHeader/Personnel@[name, role, regType, regNumber]

Reason

1. "The certificate type of '<certificate type in CIF>' is not a valid type. The certificate type must be one of '<list valid types>'."

2. "The certificate text is not in a valid format according to the Cadastral Survey Requirements available at:
   http://www.nrm.qld.gov.au/property/surveying/pdf/cadastral-survey-requirements.pdf."

3. Either:

   a. "The survey date '<survey date in CIF>' is not a valid date."; or

   b. "The certificate survey date of '<certificate text survey date>' does not match the surveyDate attribute of '<surveyDate>'."

4. "The certification date '<certification date in CIF>' is not a valid date."

5. "The certification date '<certification date in CIF>' must be on or after the survey date '<survey date in CIF>'."

6. "An ABN or ACN is required for <surveying entity in CIF>."

7. For:

   a. "The name <name in certificate> in the certificate was not found in a personnel element."

   b. "The name <name in personnel element> in a personnel element was not found in the certificate."

8. An explanatory format plan can only have a certificate of type <certificate type of Explanatory>.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.13.1.2 Personnel role and registration type—VR251

This rule checks that the registration type for each person is appropriate for their role in the survey. It does not check that the signatory is appropriate for the survey purpose, only that the registration type of the signatory can certify plans. VR252 checks whether the registration type of the signatory is appropriate for the purpose of survey.

Rule

Survey personnel must have appropriate registration type for their role in the survey. Table 3 below indicates the roles that can be performed by various registration types

Table 3: Roles that registration types can perform

Role	Registration Type				
	Surveying Associate	Surveying Graduate	Surveyor	Cadastral Surveyor	
				Person	Company
Surveyed By	Y	Y	Y	Y	
Supervised By				Y	
Signatory				Y	Y

ePlan element

SurveyorCertificate:Surveyor:[registrationNumber, registrationType, surveyorRole]

LandXML/Survey/SurveyHeader/Personnel@[regNumber, regType, role]

Reason

For each role with an inappropriate registration type:

""<person name>' (reg no: <regNumber>) has a registration type of '<regType>' and may not perform the role '<role>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.13.1.3 Correct personnel—VR252

Rule

1. Every survey must have an entity with a role of "surveyed by" unless the survey was performed by an individual who is also the signatory.

2. Every survey must have an entity with a role of "signatory".

3. If the surveyor role does not have a registration type of "cadastral surveyor" and the signatory is a company, then there must be a role of "supervised by".

4. A company cannot perform the roles of surveyor or supervisor.

ePlan element

SurveyorCertificate:Surveyor:[registrationType, surveyorRole]:

LandXML/Survey/SurveyHeader/Personnel@[regType, role].

Reason

1. "There is no personnel with a role of '<surveyorRoleType_surveyedby>'."

2. "There is no personnel with a role of '<surveyorRoleType_signatory>.'"

3. " Surveyor '<surveyor name>' '<surveyor registration number>' has a registration type of '<regType>', a supervisor is required.""

4. "A company cannot perform the roles of surveyor or supervisor."

5. "No signatory name found in certificate text".

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.14 Accuracy

The checks in this section are to ensure that parcels meet the department's criteria for completeness and accuracy. Accuracy checks are for internal consistency, e.g. calculated areas agree with stated areas and observations close within limits. Completeness ensures that parcels have correct topology and a suitable spatial description.

3.1.14.1 Areas

3.1.14.1.1 Parcel polygon areas—VR037

The mathematically calculated area of created and proposed parcels must match the stated area (rounded as appropriate, see § 4.1.2). If there is a misclose in the parcel's dimensions (see VR046 (§ 3.1.14.2.4)) a Bowditch adjustment is used to close the parcel and the adjusted data are used to calculate the area.

The total area of a created or proposed multipart lot calculated as the arithmetic sum of all its parts must be the same as the stated total area. For Part Lots (Appendix A #113) the stated areas of parts are added without rounding, for Lots in Parts (Appendix A #113) the areas of parts are calculated and added with rounding applied to the total as per Ref. 2, § 3.6.1.

Rule
1. The area of all created and proposed parcels calculated from their dimensions must be equal to the stated area to the level of accuracy stated in Ref. 2, § 3.6.1, being:

    a. where the area unit is hectare (ha) the stated and calculated area must agree to four significant figures (i.e. where the area is greater than 1 ha or 10,000 m^2)

    b. where the area unit is metre (m) and the area is equal to or greater than one m and less than one hectare, the stated and calculated area must agree to within 1 m

    c. where the area unit is metre (m) and the area is less than one metre, the stated and calculated area must agree to within 0.1 $m^{2.}$

ePlan element
Document:SurveyDocument:Survey:Parcel:Parcel:legalArea
LandXML/Parcels/Parcel@area

Reason
For each parcel where the calculated area does not match the plan area:

"The stated area of '<parcel area in CIF>' does not match the calculated area of <calculated area>."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.14.1.2   Part lot areas & total areas—VR038

This rule only runs on created and proposed multipart parcels and their parts. If one part of a multipart parcel has an area, then all parts must have an area (and *vice versa*).

Additional information for this rule is contained in § 4.1.4.

Rule

1. Only parcels with a class of lot or common property may be defined as part lots

2. If a parcel with type of part has an area, then all other parts of the same lot must have an area

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:legalArea
LandXML/Parcels/Parcel@area

Reason

1. "Parcels with a class of '<class in CIF>' may not have a type of '<parcel type in CIF>'."

2. "Some but not all of the part parcels for multipart parcel '<parcel reference in CIF>' have an area. If any of the part parcels have an area then all of the part parcels must have an area."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.14.1.3   Multiple balance areas—VR039

Rule

If there is more than one created lot with a balance area then a manual check is required. Balance areas are indicated by Action Statement type *Balance Area* (Appendix C #28).

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:legalArea
LandXML/Parcels/Parcel@area

Reason

"The plan has more than one balance lot, a manual check is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Manual	DNRM

3.1.14.1.4   Balance areas—VR040

Note that VR183 (§ 3.2.2.1.1) checks the area of the extinguished lot that is the parent of a balance area lot.

Rule

If the area of a created lot is a balance area then:

1. The extinguished lot must have an area in the CIF.

2. The sum of the area of the new lot and all the areas of all other new lots must sum to the area(s) of the cancelled parcel(s).

Note: this rule is only applied for a single balance lot, if there are two or more balance lots, rule VR039 (§ 3.1.14.1.3) applies.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:legalArea
LandXML/Parcels/Parcel@area

Reason
1. "The extinguished lot does not have an area."

2. "The area of new lots must be equal to the area of cancelled lots."

3. "The plan has a balance lot and more than one extinguished lot, a manual check is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.14.1.5   Area of new road—VR041

This rule compares the rounded calculated area (§ 4.1.2) of a road parcel to the area in its related action statement. The total area (where there is more than one new road parcel) is compared to the sum of the areas with no rounding (see Ref. 2 § 9.2.1).

Additional information for this rule is contained in § 4.1.4.

Rule

1. Where the plan has an action statement with a type of "Total area of New Road" (Appendix C #33b) the sum of the areas of all road parcels created on the plan must equal the area stated in the action statement.

2. If the boundary of a new road parcel includes an irregular line, then the area is not calculated and a manual check is required.

ePlan element

Action statement:

Document:SurveyDocument:Annotation
LandXML/Survey/SurveyHeader/Annotation@type=<annotation type>
Area:

Document:SurveyDocument:Survey:Parcel:Parcel:legalArea
LandXML/Parcels/Parcel@area

Reason

1. "The calculated total area of new road of '<calculated area of new road>' does not equal the stated area of '<area in action statement in CIF>'."

2. "New road parcel '<parcel reference in CIF>' includes an irregular line and requires a manual check."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal Manual	DNRM

3.1.14.1.6 Parcel Area Meta Data—VR042

This rule checks that lots have an area, other rules in this section check that the area is correct.

Rule

Parcels with a state of created or proposed must have an area unless:

1. the class is "road"; or

2. the type is "part".

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:legalArea
LandXML/Parcels/Parcel@area

Reason

"Parcel '<parcel reference in CIF>' does not have an area."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.14.2 Correct and complete parcels

3.1.14.2.1 Spatial extent and completeness of parcels—VR043

This rule checks the basic topology of parcels that have a coordinate geometry and that they don't have crossing lines. VR045 (§ 3.1.14.2.3) checks that parcels close topologically, VR046 (§ 3.1.14.2.4) checks calculated closure limits and VR049 (§ 3.1.14.2.6) checks the bearings and distances. Other rules check whether a parcel must possess a coordinate geometry (e.g. VR046 and VR047).

Rule

Spatial elements for parcels that have coordinate geometry other than existing or referenced must have:

1. A contiguous sequence of connected lines (e.g. 1–2, 2–3, 3–4 and so on).

2. A misclose for a traverse calculated from the bounding bearings and distances that is within the tolerance specified in Ref. 2 (VR046 § 3.1.14.2.4 and VR047 § 3.1.14.2.5).

3. No crossing lines.

4. An area (VR037 § 3.1.14.1.1) unless excepted in VR042 (§ 3.1.14.1.6).

5. A parcel identifier (VR019 § 3.1.6.1.1 and VR023 § 3.1.6.2.1).

6. A parcel class (VR024 § 3.1.6.3.1).

7. Where applicable, use of parcel (VR024 § 3.1.6.3.1).

ePlan element

1. …Parcel:Polygon:Line
…Parcel/CoordGeom/Line/[Start, End]
LandXML/Survey/ObservationGroup/ReducedObservation@[azimuth, horizDistance or slopeDistance].

2. Calculated using data from #1 above.

3. Calculated using data from #1 above.

4. See VR037 (§ 3.1.14.1.1).

5. See VR019 and VR023 (§ 3.1.6.1.1 and § 3.1.6.2.1).

6. See VR024 (§ 3.1.6.3.1).

7. See VR024 (§ 3.1.6.3.1).

Reason

1. For each parcel that does not have a contiguous sequence of connected lines:
"Parcel <parcel reference in CIF> is not a continuous sequence of connected lines."

2. See VR046 (§ 3.1.14.2.4).

3. For each parcel with crossing lines:
"Boundary of <parcel reference> contains intersecting lines."

4. See VR037 (§ 3.1.14.1.1).

5. See VR019 and VR023 (§ 3.1.6.1.1 and § 3.1.6.2.1).

6. See VR024 (§ 3.1.6.3.1).

7. See VR024 (§ 3.1.6.3.1).

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.14.2.2   Spatial extent of lots described in parts—VR044

Rule

1. A lot that is described in parts must have at least two parcels

2. Part parcels must have a parent multipart parcel

3. The following attributes for the parts must be the same as the parent multipart parcel:

   a. class

   b. state

   c. parcelFormat.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon
LandXML/Parcels/Parcel/Parcels/Parcel

Reason

1. "Lot '<lot reference in CIF>' is described as a lot in parts but only has '<number of parts.' parts."

2. "Lot '<lot reference in CIF>' is a '<parcelType>' but has no parent."

3. For each attribute value that does not match:
   "The '<attribute name in CIF>' of parcel '<parcel reference in CIF>' is '<attribute value>' which does not match its parent multipart parcel '<parent parcel reference in CIF>' that is '<parent attribute value>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.14.2.3 Parcel completeness—VR045

This rule checks parcels whose coordinate geometry must be a closed polygon, i.e. they must have a sequence of lines where the end of one line is the start of the previous line (e.g. 1—2, 2—6, 6—21, 21—1). Rule VR043 checks the sequence of the lines and VR046 checks that the calculated misclose is within tolerance.

Rule

All created and extinguished parcels that have a coordinate geometry must close topologically

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon
LandXML/Parcels/Parcel/CoordGeom/Line

Reason

For each parcel that does not close:

"Parcel '<parcel reference in CIF>' does not close topologically."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Note	N	Y	Fatal	—

3.1.14.2.4 Closure limits—VR046

All parcels and polygons created by the survey must close within specified limits (also see VR047 § 3.1.14.2.5). This rule is used by VR037 and VR043 (§ 3.1.14.1.1 and § 3.1.14.2.1).

Note that the ePlan model uses the term "observed", the equivalent in LandXML is distanceType and azimuthType = "Measured".

Rule

If all the observations in a parcel or polygon are of the type "observed", then the parcel must close within the tolerance specified in Ref. 2 (Cadastral Survey Requirments) § 3.4.2.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:bearingType
Survey/ObservationGroup/ReducedObservation/AzimuthType

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:distanceType
LandXML/Survey/ObservationGroup/ReducedObservation/distanceType

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:distanceObserType
LandXML/Survey/ObservationGroup/ReducedObservation/<horizDistance, …>

Reason

"The linear misclosure for the parcel '<parcel identifier>' is outside the limit specified by NRM Requirements for Survey section 3.4.2. Linear misclosure: '<linear misclose>' Bearing misclosure: '<bearing misclose>' Misclosure Ratio: <ratio>."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.14.2.5   Exception to closure limits—VR047

Rule

If at least one observation in a parcel or polygon is of a type that is NOT "observed" AND the parcel or polygon closure is outside the specified limits there must be an annotation in the validation report from the document submitter to explain the exception. See Ref. 2 § 3.4.2 for details.

ePlan element

As for VR046 (§ 3.1.14.2.4)

Reason

"This parcel contains one or more observations which are not measured. The linear misclosure for the parcel '<parcel identifier>' is outside the limit specified by DNRM Requirements for Survey section 3.4.2. Linear misclosure: '<linear misclose>' Bearing misclosure: '<bearing misclose>' Misclosure ratio: <ratio>" and;

"Annotation in validation report required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Exception	DNRM

MSL and Spherical distances do not apply to this rule as they do not relate to the lines that make up a parcel. This rule is complimentary to VR043 (§ 3.1.14.2.1).

Rule

1. Each line that makes up a polygon of a created parcel must:

   a. have a set of observations consisting of a bearing (azimuth) value and a distance value

   b. if the parcel format is Standard, Building or Restricted a horizontal distance value is required

   c. if the parcel format is Volumetric then one of horizontal, vertical or slope distance values is required.

2. Each curve that makes up a polygon of a created parcel must have a corresponding arc observation and must have attributes for:

   a. arcType

   b. chordAzimuth

   c. length

   d. radius

   e. rot.

ePlan element

1. As for VR043 (§ 3.1.14.2.1)

2. Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:distanceObserType.distance LandXML/Survey/ObservationGroup/ReducedObservation@horizDistance

3. Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:distanceObserType.[distance or vertDistance] LandXML/Survey/ObservationGroup/ReducedObservation@[horizDistance or slopeDistance or vertDistance]

Reason

1. For each line that has a missing bearing or distance:
   "A dimension for <boundary line reference> has not been provided."

2. For each observation with an incorrect distant type:
   "Observed distances for a parcel with format '<parcel format in CIF>' must have a distance type of horizontal."

3. For each observation with an incorrect distance type:
   "Observed distances for a parcel with format '<parcel format in CIF>' must have a distance type of <list of allowable distance types>."

4. For each curve observation with incorrect attributes:
   "Observed curve attributes for a parcel with format '<parcel format in CIF>' are incorrect."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.14.2.7 Specific distance type observations—VR052

This rule relates to rule VR049 (§ 3.1.14.2.6).

Rule

If at least one distance observation in a polygon or parcel does not have a distance observation attribute of "Horizontal" with a corresponding distance observation type of "Adopted" or "Measured" or "Balance" then the following exceptions may apply:

1. The distance observation type may be "Scaled" and the distance observation attribute may be "Horizontal" if the survey head of power is the Land Act

2. The distance observation type may be "Deduced" and the distance observation attribute may be "Horizontal" if the survey plan has a format of Explanatory

3. The distance observation type may be "Measured" and the distance observation attribute may be "Slope" if the survey plan has a format of Volumetric

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:distanceType
LandXML/Survey/ObservationGroup/ReducedObservation/distanceType

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:distanceObserType
LandXML/Survey/ObservationGroup/ReducedObservation/<horizDistance, …>

Reason

1. "A distance observation type '<observation type>' with attribute'<observation attribute>' can only appear on a survey with a head of power of '<head of power>'."

2. "A distance observation type '<observation type>' with attribute '<observation attribute>' can only appear on a survey with a survey format of '<survey format>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Exception	DNRM

3.1.14.2.8 New polygons (Dissolving Polygons)—VR053

This rule checks that all the points in extinguished parcels are accounted for in new parcels. The rule does not deal with ambulatory boundaries that are modified by the survey, they must be dealt with in the manual check at VR079 or VR080 (§ 3.1.16.1.1 and § 3.1.16.1.2 respectively) as applicable.

A modified ambulatory boundary is one that has new boundary points between its start and end, or has new end points defined.

Rule

1. All new polygons must be able to be dissolved into the existing polygon as defined in the supplied data (the only polygons that will be left unaccounted for are those for which their observations have been used once).

2. If the parcel contains an ambulatory boundary, a manual check is required.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon

Reason

1. "The outer boundary of new lots is not concurrent with the boundary of the related cancelled lots. (StationId: '<StationId in CIF>')".

2. Parcel <parcel in CIF> has an ambulatory boundary and requires a manual check.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.1.14.3 Correct and Complete Dimensions

3.1.14.3.1 Secondary interests spatial extent—VR055

This rule checks that all secondary interests have a spatial extent, other rules (such as VR061 § 3.1.15.1.2) check that they are accurate. Failure leads to an exception as the extent of an interest may be defined in documents other than the survey plan (CIF)(See also §4.9.).

Rule

The spatial extent of registered secondary interests affecting a parcel must be defined (i.e. co–ordinate geometry must be provided).

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry
LandXML/Parcels/Parcel/CoordGeom

Reason

"The spatial extent of secondary interest '<secondary interest reference in CIF>' affecting '<parcel reference in CIF>' must be provided."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Exception	—

3.1.14.4 Correct Compilation Statements

Note that a survey may use information compiled from sources other than survey plans, such as topographic maps or other authoritative and publicly searchable information.

VR241 (§ 3.2.1.1.2) checks that plan numbers in the compiled–from statement exist in DNRM records.

3.1.14.4.1 Compiled certificate Form 18 and Form 19—VR058

See also VR036 (§ 3.1.13.1.1) regarding correct wording of the surveyors certificate for a compiled plan (a Form 19 for an EARL plan).

Rule

If all the observations in the survey have a type of "adopted" and all irregular lines have a source attribute then:

1. The surveyor's certificate type must be "Form 18" or "Form 19".

2. The sources listed in the Form 18 or Form 19 must be consistent with the sources noted in the source attribute of the observations and irregular lines, i.e.:

    a. each source listed in the compiled–from statement must appear in at least one observation or irregular line, and

    b. each source in an adopted observation or irregular line must be listed in the compiled–from statement.

ePlan element

1. LandXML/Survey/SurveyHeader/SurveyorCertificate/certificateType

2. Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line: RegularLine:Observation:ObservedLine:<bearingType or distanceType> LandXML/Survey/ObsevationGroup/ReducedObservation@[distanceType= 'Measured' , azimuthType='Measured']

    Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line: RegularLine:Observation:ObservedLine:<adoptedBearingSurvey or adoptedDistanceSurvey> LandXML/Survey/ObsevationGroup/ReducedObservation@[distanceType= 'Adopted' , azimuthType='Adopted']

    Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line: RegularLine:source LandXML/Parcels/Parcel/CoordGeom/IrregularLine@source

Reason

1. "Where all observations are "Adopted", a Form 18 or Form 19 must be used."

2. For each plan listed in the Form 18 or from 19 that has not been used for an observation: "Plan '<plan reference in CIF>' in the compiled-from statement is not used in an observation".

3. For each plan listed in a subject parcel adopted observation that is not in the Form 18 or Form 19: "Plan '<plan reference in CIF>' is used in an adopted observation but is not in the compiled-from statement."

4. "If a Form 18 or Form 19 is used, all observations must be 'Adopted'".

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Exception	DNRM

This rule checks the Form 13 or Form 14 and if a compilation certificate action statement is required (Appendix C AS#10). VR241 (§ 3.2.1.1.2) checks that the compiled–from plan numbers exist in DNRM records.

Rule

If any bearing or distance observation for a subject parcel has a type of "Measured" or at least one irregular line does not have a source attribute, then:

1. The surveyor's certificate type must be "Form 13" or Form "14".

2. If the surveyor's certificate is "Form 13" or "Form 14" and the survey contains adopted or balance observations the CIF must include Action Statement type *Compilation Certificate* (Appendix C #10) (e.g. "…original information compiled–from plans RP213546, SP808763 and SP10537…").

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:<bearingType or distanceType>
LandXML/Survey/SurveyHeader/SurveyorCertificate/certificateType

Reason

1. "Where 'Measured' observations are used, the Surveyor's Certificate type must be 'Form 13' or 'Form 14'."

2. "Plan has adopted or balance observations, a compilation certificate annotation is required".

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Exception	DNRM

3.1.14.4.3   *Action statement Compilation Certificate—VR250*

Rule

If Action Statement type *Compilation Certificate* (Appendix C #10) is used, then:

1. The surveyor certificate must be Form 13 or Form 14.

2. Sources listed in the compilation certificate must be consistent with the sources in observations and irregular lines (see VR058 § 3.1.14.4.1 #2.a and 2.b).

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:Geometry:Polygon:Line:RegularLine:Observation:ObservedLine:<bearingType or distanceType>
LandXML/Survey/SurveyHeader/SurveyorCertificate/certificateType
As for VR058 (§ 3.1.14.4.1)

Reason

1. "CIF contains a Compilation Certificate but there are no sources in the compiled-from statement, and no adopted and/or balance observations were found."

2. "Action statement '<action statement type in CIF>' can only be used with Surveyor Certificate Form 13 or Form 14."

3. For each source in the compilation certificate that is not in an adopted or balance observation:
   "Source '<source reference in CIF>' in the compiled–from statement is not used in a balance or adopted observation."

4. For each source listed in an adopted or balance observation that is not in the compilation certificate:
   "Source '<source reference in CIF>' is used in a balance or adopted observation but is not in the compiled–from statement."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.1.14.5 Meridian Statements

3.1.14.5.1 Meridian Origin—VR227

The meridian origin is determined from the LandXML/CoordinateSystem element. The value of the datum attribute is of surveyBgDatumType (Qld eplan enumerated–types schema definition), the desc attribute is free text. Note that VR226 (§ 3.2.9.1.1) uses this data to check the survey meridian.

Rule
1. A survey must have a meridian statement.

2. If the meridian statement indicates:

   a. a datum other than "Of Plan" (e.g. MGA or AMG), then it shall also state how the meridian was established (e.g. datum="AMG" desc="Vide GTK")

   b. a previous survey, the plan number must be included (e.g. datum="Of Plan" desc="SP123456").

ePlan element
Document:SurveyDocument:Survey:OriginOfBearings:<type, description>
LandXML/CoordinateSystem@[datum, desc]

Reason
1. "A meridian statement is required."

2. For a meridian statement that is missing an establishing statement or plan number if applicable:

   a. "Meridian statement '<meridian statement from CIF>' references '<datum in CIF>' but no establishing statement was found."

   b. "Meridian statement '<meridian statement from CIF>' states '<datum in CIF>' but no plan number has been supplied."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Exception	DNRM

3.1.15 Allocations

All burdens (easements, mortgages, etc.) on cancelled parcels must either be surrendered or allocated to a new parcel. Some burdens, (such as mortgages) may not be noted on the previous plan and may only be on the title.

For all new parcels, an allocation must exist from a created, existing or extinguished parcel (e.g. a new easement must have an allocation from an existing parcel).

Allocations are identified in LandXML by a parcels element within the extinguished or burdened parcel that references the created parcel or parcels (see § 4.6).

3.1.15.1 Administrative Advices

3.1.15.1.1 Allocation of existing registered Administrative Advices—VR060

Rule

All existing registered administrative advices on cancelled parcels must be allocated to the new lots that they affect.

For each administrative advice on an extinguished parcel a new interest must be created for each new parcel affected by the interest (there must be at least one new interest).

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Reason

1. For each existing interest that doesn't have a new interest:
   "Dealing '<reference to interest in cancelled parcel>' has not been allocated to a new parcel."

2. "Dealing '<reference to interest in new parcel>' has not been linked to the cancelled parcel."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.15.1.2 Spatial extent of all registered Administrative Advices—VR061

Where an administrative advice is included in an extinguished or affected parcel, its allocations are checked simultaneously with the parcel.

This rule deals with administrative advices that are described by reference parcels.

Rule

The spatial extent of all existing registered Administrative Advices that affect new lots must be:

1. on the plan

2. within the bounds of the parcel they affect (i.e. must intersect the created primary interests it is allocated to).

The cumulative spatial extent of the new interests must be equal to the spatial extent of the existing interest that created them (i.e. the administrative advice must be allocated to the created primary interests that it spatially overlaps).

ePlan element

> Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
> LandXML/Parcels/Parcel/Title@titleType

Reason

1. For each administrative advice that doesn't have a spatial extent:
   "A spatial extent must be provided for dealing '<reference to interest>'."

2. For each administrative advice that is not within a parcel it allocates to:
   "Dealing '<reference to interest>' is allocated to '<reference to parcel>' but does not overlap it."

3. For each created primary interest that the administrative advice overlaps but isn't allocated to:
   "Dealing '<reference to existing interest>' affects '<reference to affected created primary interest>' but is not allocated to it."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.1.15.1.3 Scope of registered Administrative Advices—VR062

Rule

> If the registered administrative advices do not affect all of the subject lots then a manual check is required.

ePlan element

> Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
> LandXML/Parcels/Parcel/Title@titleType

Reason

> "Administrative advices do not affect all subject lots, a manual check is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Manual	DNRM

3.1.15.2 Existing Registered Secondary Interest

3.1.15.2.1 Allocation of all existing registered secondary interests—VR063

This rule is similar to VR060 (§ 3.1.15.1.1) except that it deals with secondary interests rather than administrative advices.

Rule

> All existing secondary interests on cancelled parcels must be allocated to the new lots that they affect.

> For each secondary interest on an extinguished parcel:

1. A new interest must be created for each new parcel affected by the interest (there must be at least one new interest).

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Reason

For each existing interest that doesn't have a new interest:
"Dealing '<reference to interest in cancelled parcel>' has not been allocated to a new parcel."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.2.2   *Existing registered secondary interests must be shown—VR064*

This rule is similar to VR061 (§ 3.1.15.1.2) except that it deals with secondary interests rather than administrative advices.

Rule

The spatial extent of all existing secondary interests that affect new lots must (except for #3 below):

1. Be on the plan (covered by VR055 (§ 3.1.14.3.1) and VR060 (§ 3.1.15.1.1)).

2. Be within the bounds of the parcel they affect.

3. Except for parcels that are subject to resumption on surveys where the Head of Power is the *Acquisition of Land Act 1967* (see VR207 § 3.2.5.1.1, 0).

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Reason

1. See VR055 and VR060 (§ 3.1.14.3.1 and § 3.1.15.1.1).

2. For each secondary interest that is not within the affected parcel:
    "The spatial extent of '<reference to interest>' is not within the parcel it affects."

3. For each unallocated created parcel that intersects an affected secondary interest:
    "The created parcel '<createdParcelName>' intersects with the affected secondary interest '<interest name> but is not allocated to the interest.

4. See VR207 (§ 3.2.5.1.1).

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	1. Fatal 2. Fatal 3. Manual	—

3.1.15.3   Local Government

3.1.15.3.1   Spatial element of local government—VR247

Note that VR033 (§ 3.1.10.1.1) checks that the survey has a local authority.

Rule
> If a survey has more than one local government area, a spatial element for each local government area boundary must be included in the survey.

ePlan element
> Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
> LandXML/Parcels/Parcel/Title@titleType

Reason
1. For each local government boundary that is not in the plan:
   "The boundary for '<local government area>' must be included in the plan."

2. For each (AdministrativeArea) local government that does not have an associated local government Parcel element: "No local government Parcel was found for the local government '<local government name>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.3.2   Allocation of local government areas—VR065

There must be an allocation of local government areas to new lots (see § 4.7). This rule is similar to VR066 (allocation to created parcels), VR074 (original grant allocation), VR076 (parish allocation), VR078 (locality allocation) and VR247 (local government spatial element).

Rule
> Created parcels must:
>
> 1. be spatially covered by the local government areas that allocate to them
>
> 2. spatially intersect all the local government areas that allocate to them.

ePlan element
> Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
> LandXML/Parcels/Parcel/Title@titleType

Reason
1. For each created lot that is not covered by the LGAs allocating to it:
   "Lot '<lot reference in CIF>' is not fully covered by LGA allocations."

2. For each lot that is does not intersect with an LGA that allocates to it:
   "Lot '<lot reference in CIF>' has an allocation from LGA '<LGA in CIF>' that does not intersect with it."

3. For each lot with without a parish allocation:
   "Lot '<lot reference in CIF>' has no parish allocations."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.3.3 Local government allocated area—VR248

Rule

Where a created parcel exists in more than one local government area:

1. the area of the parcel allocated to each local government must be included

2. the sum of the allocated areas must equal the area of the parcel.

ePlan element

LandXML/Parcels/Parcel[@name=local authority name]@area

Reason

1. For each missing area:
"The area of <parcel reference in CIF> in local authority <local authority in CIF> must be included."

2. For each incorrect area:
"The LGA area allocated to '<lot reference in CIF>' of '<sum of area allocations>' is not equal to the lot area of '<lot area in CIF>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.4 Lot Allocations

3.1.15.4.1 Allocation of existing parcel(s) to newly created parcel(s)—VR066

Checks must be made that all existing interests are dealt with, notes on allocations are included in § 4.6, the general rule for allocation of primary interests is in § 4.6.1.

Rule

All parcels in the plan description and previous plan description must be allocated.

The entire extent of each extinguished parcel must be covered by created parcels (note that the new parcels may extend beyond the extinguished parcel):

1. At least one allocated parcel must be listed for each extinguished parcel.

2. Every extinguished parcel must be spatially covered by the created parcels that are linked to it by an allocation (see § 4.6).

3. All created parcels must be contained partly or wholly by the parcel(s) that allocate to them.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Reason

1. "Created parcels exist but no extinguished parcels can be found."

2. "Extinguished parcels exist but no created parcels can be found."

3. "Extinguished parcel '<Parcel name>' has no allocation parcels."

4. For each extinguished lot that is not covered by the created lots it is allocated to:
"Incorrect allocations table for extinguished parcel: '<extinguished parcel ref>'.
Parcel '<Created parcel ref>' has been allocated but does not overlap."

5. For each extinguished lot that is covered by a created lot which it is not allocated to:
"Incorrect allocations table for extinguished parcel: '<extinguished parcel ref>'.
Parcel '<created parcel ref>' has not been allocated but intersects with an area of
'<intersecting area>' square metres."

6. For each extinguished lot that allocates to parcels that are not defined by the CIF:
"Extinguished parcel '<extinguished parcel ref>' allocates to parcels that are not
defined in the CIF."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.15.5   Mortgage

Note that mortgages may not be allocated to common property, therefore if an extinguished lot
has an allocation to CP, there must be a separate mortgage allocation that excludes the CP (see
§ 4.6.8).

3.1.15.5.1   Spatial extent of mortgage—VR068

If the mortgage is not over the whole of the lot to be cancelled, a spatial element for the extent of
the mortgage must be included in the plan.

Rule

If a mortgage is not over an entire cancelled parcel:

1. a spatial extent for the mortgage must be included in the plan

2. the spatial extent must cover the parcels affected by the mortgage

3. a manual check is required.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Reason

1. For each mortgage that has a missing spatial extent:
"The spatial extent of mortgage '<mortgage reference in CIF>' has not been included
in the plan."

2. For each mortgage spatial element that does not extend over a parcel that it affects:
"The spatial extent of mortgage '<mortgage reference in CIF>' does not extend to
parcel '<parcel reference in CIF>' that is encumbered by the mortgage."

3. If none of the above apply:
   "Cancelled lot '<parcel reference in CIF>' has a mortgage that is not over the whole of the lot, a manual check is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Manual	DNRM

3.1.15.5.2 Validate allocation of mortgage—VR069

All mortgages for cancelled lots must be allocated to new lots. If a mortgage is not over the whole of a cancelled lot it must be allocated to a created parcel.

Rule
1. Where a mortgage is over all of an extinguished lot, it is allocated by the extinguished lot allocations.

2. If a mortgage is not over the whole of an extinguished lot then:

   a. the mortgage must have a related referenced parcel

   b. the referenced parcel must have allocations to one or more created lots

   c. if the referenced lot fully allocates to the created parcel, its spatial extent must either fully cover, or be fully contained by, the created parcel

   d. if the referenced parcel partially allocates to created parcel, it spatial extent must not fully cover the created parcel and must extend beyond it.

3. If the extinguished parcel is allocated to an excluded parcel class (i.e. one or more parcels with a class of common property, road, USL or hydrography) the mortgage must not be allocated to the excluded parcel.

ePlan element
Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Reason
1. No error message.

2. Where a mortgage is not over the whole of an extinguished lot:

   a. no error message as there is no validation for this condition

   b. "Mortgage '<dealing number in CIF>' must be allocated to a created lot."

   c. "Mortgage '<dealing number in CIF>' allocated by '<referenced parcel>' is fully allocated but appears to require a partial allocation."

   d. "Mortgage '<dealing number in CIF>' is partially allocated by '<referenced parcel>' but appears to require a full allocation."

3. "Mortgage '<dealing number in CIF>' may not be allocated to '<parcel reference in CIF>' as it is a '<parcel class>' parcel."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Manual	DNRM

3.1.15.6 New Secondary Interest

New secondary interests (see VR023 § 3.1.6.2.1) are validated similarly to existing secondary interests (see VR063 § 3.1.15.2). All new secondary interests in the allocations table must also be in the description and the plan.

Where a secondary interest is created over a new parcel, it is first allocated to the cancelled parcel.

3.1.15.6.1 Spatial extent of new secondary interest(s)—VR070

This rule checks that the spatial extent of new secondary interests is wholly contained within their primary parcel. Rule VR009 (§ 3.1.5.1.2) checks that new secondary interests have a spatial element, this rule checks that it is within the affected parcel.

Rule
> All new secondary interests must be wholly contained in the parcel that they affect.

ePlan element
> As for VR043 (§ 3.1.14.2.1)

Reason
1. "Secondary interest '<secondary interest reference in CIF>' must be wholly contained within parcel '<affected parcel in CIF>'."

2. Created secondary interest '<secondary interest>' has no parcels that allocate to it so no spatial check can be performed.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	—

3.1.15.6.2 Allocation of new secondary interest(s)—VR071

Rule
1. New secondary interests must have an allocation from an existing parcel (where "existing" means a lot with a state of either affected or extinguished in the CIF).

2. If the existing parcel is extinguished, it must also have an allocation from a new lot.

ePlan element
> As for VR043 (§ 3.1.14.2.1)

Reason
1. "New secondary interest '<secondary interest reference in CIF>' must have an allocation from an existing parcel."

2. "Secondary interest '<secondary interest reference in CIF>' has an allocation from extinguished parcel '<extinguished parcel reference in CIF>' and must have an allocation from a new lot."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.6.3 Allocation of new secondary interests to existing secondary interests—VR072

Rule

Where a new secondary interest affects an existing lease, there must be an allocation of the lease to the new secondary interest (see also VR207 § 3.2.5.1.1).

ePlan element

Action statement:
Document:SurveyDocument:Annotation
LandXML/Survey/SurveyHeader/Annotation@type=<annotation type>

Head of Power:
Document:SurveyDocument:HeadOfPower
LandXML/Survey/SurveyHeader/HeadOfPower

Reason

"New secondary interest '<new secondary interest reference in CIF>' affects lease '<lease reference in CIF>' and must be allocated."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.7 Original Grant

3.1.15.7.1 Spatial element of original grant—VR073

This rule is similar to VR065 (§ 3.1.15.3.1), except dealing with original grant.

Rule

If a survey has more than one original grant, a spatial element for each original grant boundary must be included in the survey.

ePlan element

Title:

Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Spatial element:

as for VR043 (§ 3.1.14.2.1)

Reason

"There is more than one original grant parcel, a spatial element for '<parcel reference in CIF>' is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.1.15.7.2 Allocation of original grant—VR074

This rule is similar to VR066 (§ 3.1.15.4.1) (i.e. implements the general rule in § 4.6.1) but dealing with existing parcels with a title type of original grant.

Note that there is no allocation of original grant to new road. If a lot is created wholly from USL or hydrographic parcels it will also have no original grant allocation. If a lot is partly created from USL or hydrographic parcels it will not be fully covered by original grant allocations.

Rule

Created primary parcels must:

1. be spatially covered by the original grant parcels that allocate to them

2. spatially intersect all the original grant parcels that allocate to them.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Reason

1. For each created lot that is not covered by the original grants to it:
   "Lot '<lot reference in CIF>' is not fully covered by original grant allocations."

2. For each created lot that has an allocation from an original grant that doesn't intersect with it:
   "Lot <lot reference in CIF>' has an allocation from '<original grant reference in CIF>' that does not intersect with it."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.8 Parish

3.1.15.8.1 Parish spatial element—VR075

This rule is the same as for VR247 (§ 3.1.15.3.1), except dealing with parish.

Rule

If a survey has more than one parish, a spatial element for each parish boundary must be included in the survey.

ePlan element

Admin area element:
Document:SurveyDocument:AdministrativeArea:adminAreaName
  where: adminAreaType='Parish'
LandXML/Survey/SurveyHeader/AdministrativeArea@adminAreaName
  where: @adminAreaType='Parish'

Spatial element:
Document:SurveyDocument:Survey:Parcel:Parcel:Geometry
Parcel::useOfParcel="Parish"
LandXML/Parcels/Parcel[@useOfParcel="Parish"]/CoordGeom

Reason

1. For each parish that does not have a spatial element:
   "A spatial element is required for '<parish that requires CoordGeom>'."

2. For each AdministrativeArea parish that does not have an associated parish Parcel element:
   "No parish Parcel was found for the parish '<parish name>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.8.2 Parish allocations—VR076

This rule is the same as VR066 (§ 3.1.15.4.1, also see the general rule in § 4.6.1), except dealing with parish. Parish allocations to new parcels are contained in the parish parcel, the spatial component is checked only if the subject parcels are in more than one parish.

Rule

Created parcels must:

1. be spatially covered by the parish parcels that allocate to them

2. spatially intersect all the parish parcels that allocate to them.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:
LandXML/Parcels/Parcel/Parcels

Reason

1. For each created lot that is not covered by the parishes allocating to it:
   "Lot '<lot reference in CIF>' is not fully covered by parish allocations."

2. For each created lot that has an allocation from a parish that doesn't intersect with it:
   "Lot <lot reference in CIF>' has an allocation from '<parish reference in CIF>' that does not intersect with it."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.9 Locality

3.1.15.9.1 Locality spatial element—VR077

This rule is the same as for VR247 (§ 3.1.15.3.1), except dealing with locality.

Rule

If a survey has more than one locality, a spatial element for each locality boundary must be included in the survey.

ePlan element

Admin area element:
Document:SurveyDocument:AdministrativeArea:adminAreaName
  where: adminAreaType='Locality'
LandXML/Survey/SurveyHeader/AdministrativeArea@adminAreaName
  where: @adminAreaType='Locality'

Spatial element:
Document:SurveyDocument:Survey:Parcel:Parcel:Geometry
where Parcel::useOfParcel="Parish"

Reason

"The survey contains more than one locality the boundary for <locality> must be included in the survey."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.15.9.2 Locality allocation—VR078

This rule is the same as VR066 (§ 3.1.15.4.1, also see the general rule in § 4.6.1), except dealing with locality. Locality allocations to new parcels are contained in the locality parcels, the spatial component is checked only if the subject parcels are in more than one locality.

Rule

Created parcels must:

1. be spatially covered by the locality parcels that allocate to them

2. spatially intersect all the locality parcels that allocate to them.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:
LandXML/Parcels/Parcel/Parcels

Reason

1. For each created lot that is not covered by the localities allocating to it:
   "Lot '<lot reference in CIF>' is not fully covered by locality allocations."

2. For each created lot that has an allocation from a locality that doesn't intersect with it:
   "Lot <lot reference in CIF>' has an allocation from '<locality reference in CIF>' that does not intersect with it."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.16　Ambulatory Boundaries

3.1.16.1　*General*

3.1.16.1.1　*Observed ambulatory boundaries—VR079*

Rule

Surveys with observed ambulatory boundaries must be manually checked.

Note: an observed ambulatory boundary is assumed if a parcel coordinate geometry has an irregular line **without** a source attribute.

ePlan element

Document:SurveyDocument:Annotation
LandXML/Survey/SurveyHeader/Annotation@type="Ambulatory Boundary"

Reason

"Surveys with observed ambulatory boundaries must be manually checked."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Manual	DNRM

3.1.16.1.2　*Compiled ambulatory boundaries—VR080*

Rule

If a survey contains a compiled ambulatory boundary, a manual check is required (see also VR 241 § 3.2.1.1.2).

Note: a compiled ambulatory boundary is assumed if a parcel coordinate geometry has an irregular line **with** a source attribute.

ePlan element

Document:SurveyDocument:Survey:Parcel:Geometry:Line:IrregularLine
LandXML/Parcels/Parcel/CoordGeom/IrregularLine@source

Reason

"Surveys containing a compiled ambulatory boundary must be manually checked."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Manual	—

3.1.17 Connection to Permanent Marks

3.1.17.1 General

3.1.17.1.1 Connection requirement exceptions—VR081

This rule checks whether or not a survey must have connections and also whether the plan has the correct number of connections.

Rule

1. Plans must have connections to permanent marks except for:

    1. Compiled surveys
        (LandXML/Survey/SurveyHeader@type="compiled")

    2. Subdivision of a lot on a BFP
        (LandXML/Survey/SurveyHeader@surveyFormat="BuildingFormat" and
        @surveyPurpose="Subdivision")

    3. Amalgamation of lots on a BFP
        (LandXML/Survey/SurveyHeader@surveyFormat="BuildingFormat" and
        @surveyPurpose="Amalgamation")

2. If permanent mark connections are required, there must be connections to at least two existing or new permanent marks.

ePlan element

Document:SurveyDocument:Survey:Points:SurveyPoint:SurveyMark:type
LandXML/Monuments/Monument@type

(When the monument type is one that qualifies as a permanent mark.)

Reason

1. "Plan has connections to permanent marks that are not required."

2. "This plan must have connections to at least two existing or new permanent marks."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Exception	DNRM

3.1.18 Lines

3.1.18.1 General

3.1.18.1.1 Observed lines—VR085

Rule

All lines in the survey with distance and bearing observation type of "observed" must join survey points (cgpoints) that are also instrument points recorded in the plan.

ePlan element
Survey lines:
…Parcel:Parcel:Polygon:Line
…/Parcel/CoordGeom/Line/[start, end]

Observations:
…Parcel:Parcel:Polygon:Line:Point:SurveyPoint:Observation
LandXML/Survey/ObservationGroup/ReducedObservation@[distanceType='Measured',
azimuthType='Measured']
Instrument points:
LandXML/Survey/InstrumentSetup/InstrumentPoint

Reason
"Survey points '<start point in CIF>' and '<end point in CIF>' for observed line '<line
reference in CIF>' must be instrument points."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.19 Survey Points

3.1.19.1 General

The following rules apply to points created or observed by the survey. They do not apply to
calculated points generated for purposes such as centroids or terminators for clipped lines.

3.1.19.1.1 Survey point (cgpoints) persistent identifier—VR089

The implementation of this rule includes parts of the monument rules in § 3.1.19.2.

Rule
Where a survey point is linked to a monument (i.e. the survey point's name is the same as
a monument's point reference attribute):

1. If the survey point has an OID that is greater than 999999, the monument must have a
   state other than "New".

2. If the survey point doesn't have an OID, the monument must have a state of "New".

ePlan element
Survey point:
LandXML/CgPoints/CgPoint

Monument:
LandXML/Monuments/Monument

Reason
For monuments:

1. "Survey point '<survey point reference in CIF>' has an OID that is equal to or greater
   than 1000000, therefore the state of its monument '<monument reference in CIF>'
   must not be 'New'."

2. "Survey point '<survey point reference in CIF>' does not have an OID, therefore the
   state of its monument '<monument reference in CIF>' should be 'New'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

Rule

All points that are in the survey must be accounted for by the following:

1. All survey points (CgPoints) must be joined to the survey by at least one observation or line except when the survey point is a centroid. (Centroids are identified as survey points that have a pntRef attribute value of "sideshot" and a name that matches the name of a Centre element.)

2. All instrument points in the plan must be joined to the survey by at least one observation.

ePlan element

Survey point:
LandXML/CgPoints/CgPoint

Line:
LandXML/Parcels/Parcel/CoordGeom/Line/[Start@pntRef or End@pntRef]

Observation:
LandXML/Survey/ObservationGroup/ReducedObservation[@setupID or @targetSetupID]

Instrument Point:
LandXML/Survey/InstrumentSetup/InstrumentPoint@pntRef

Reason

1. Survey point '<survey point reference in CIF>' is part of the survey but is not connected by an observation.

2. Instrument point '<instrument point reference in CIF>' is not joined to the survey by an observation.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.19.2   *Monuments*

In general, all the boundary points of created parcels must have a monument. In addition, certain other points must also have monuments. As with previous rules regarding points, these rules do not apply to generated points such as centroids or terminators of clipped lines.

3.1.19.2.1   *Monument survey points (Unobserved)—VR096*

This rule is the compliment of VR097 (§ 3.1.19.2.2) and they are implemented together.

Rule

Survey points that are not connected to the survey by a bearing and distance of type "observed" must not have a monument.

ePlan element

LandXML/CgPoints/CgPoint@[oID, name]
LandXML/Monuments/Monument@pntRef
LandXML/ReducedObservation@[setupID, targetID, azimuthType]

Reason
"Survey point '<survey point reference in CIF>' is not observed but has a monument '<monument reference in CIF>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.19.2.2 Monument survey points (Observed)—VR097

This rule is the compliment of VR096 (§ 3.1.19.2.1) and they are implemented together.

Rule
Survey points that are connected to the survey by a bearing and a distance of type "observed" must have a monument.

ePlan element
As for VR096 (§ 3.1.19.2.1)

Reason
Survey point '<survey point reference in CIF>' is observed but does not have a monument."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.19.2.3 Monuments survey format exception—VR098

Rule
If a survey has a survey format of "Explanatory", survey points on the plan must not have monuments.

ePlan element
LandXML/CgPoints/CgPoint@[oID, name]
LandXML/Monuments/Monument@pntRef
LandXML/ReducedObservation@[setupID, targetID, azimuthType]
LandXML/Survey/SurveyHeader@surveyFormat

Reason
"Survey point '<survey point reference in CIF>' has a monument but survey points in a plan of format '<survey plan format>' must not have monuments."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

This rule is the complement of VR100 (§ 3.1.19.2.5) and they are implemented together.

Rule

If a monument has a condition of "disturbed", "destroyed" or "removed", the plan must have a new monument record for a replaced monument with a state of "renewed" for the same survey point.

ePlan element

Document
LandXML/CgPoints/CgPoint@name
LandXML/Monuments/Monumnent@pntRef

Reason

"Survey point '<survey point reference in CIF>' has a monument with a of '<survey point condition in CIF>' but no new monument with a state of '<renewed>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.19.2.5 *Monument state exception—VR100*

This rule is the complement of VR099 (§ 3.1.19.2.4) and they are implemented together.

Rule

If a monument has a state of "renewed", there must be another monument record for that same point with a monument state of "original" and a monument condition of "disturbed", "destroyed" or "removed".

ePlan element

Document
LandXML/CgPoints/CgPoint@name
LandXML/Monuments/Monumnent@pntRef

Reason

"Survey point '<survey point reference in CIF>' has a monument with a state of '<survey point state in CIF>' but no original monument with a condition of 'disturbed', 'destroyed' or 'removed'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.20   Encroachments

3.1.20.1   Encroachment Action

3.1.20.1.1   Encroachment action (AS#22)—VR103

Note that in Queensland only structures can encroach, parcels can't have a state of "encroaching"; however it is included in the ePlan model for jurisdictions that do allow encroaching parcels.

Rule

If a plan has a feature of "Encroachment":

1. If the survey purpose is identification, it must have Action Statement type *Encroachment - identification survey* (Appendix C #23).

2. Plans with a survey purpose other than identification must have Action Statement type *Encroachment* (Appendix C #22).

ePlan element

Action statement:
Document:SurveyDocument:Annotation
LandXML/Survey/SurveyHeader/Annotation@type=<annotation type>

Encroachment:
Document:SurveyDocument:Survey:Parcel:Parcel:Encroachment
LandXML/PlanFeatures/Feature@desc="encroachment"

Reason

1. "Plan has a feature of '<feature description in CIF>' but does not have Action Statement type '<encroachment annotation type>'".

2. "Identification plan has a feature of '<feature description in CIF>' but does not have Action Statement type '<encroachment ident annotation type>'".

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.21   Public Use Land

3.1.21.1   General

3.1.21.1.1   Public use land (Lot type descriptor 1)—VR106

This rule applies to public use land (PUL) that is not road, VR107 (§ 3.1.21.1.2) deals with PUL that is road.

Rule

1. If Action Statement type *Public Use Land* (Appendix C #8) exists then at least one parcel with a class of lot and a use of parcel of "public use land" (i.e. any use of parcel that includes public use land, see Appendix D) must be created by the survey.

2. If the survey creates a parcel with a class of lot and use of "public use land", then action statement "Public Use Land" must be included.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:useOfParcel
LandXML/Parcels/Parcel@useOfParcel

Reason
1. "Action Statement 'Public Use Land' exists on the plan but no created lots have a use of 'public use land'."

2. "The survey creates lots that are public use land but Action Statement 'Public Use Land' has not been included."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.21.1.2 Public use land (Lot type descriptor 2)—VR107

This rule applies to public use land that is road, VR106 (§ 3.1.21.1.1) deals with public use land that is not road.

Rule
1. If Action Statement type *Total Area of New Road* (Appendix C #33b) exists then at least one created parcel must have a class of "road".

2. If the survey creates new road, then Action Statement type *Total Area of New Road* must be included.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel:useOfParcel
LandXML/Parcels/Parcel@useOfParcel

Reason
1. "Action Statement "Public Use Land—New Road" exists on the plan but no created parcels have a class of 'road'."

2. "The survey creates new road but Action Statement 'Total Area of New Road' has not been included."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.22 Standard Format Plans

3.1.22.1 General

3.1.22.1.1 Basic Standard Format Plan Requirements—VR108

Additional information for this rule is contained in § 4.8.3 and § 4.8.4.

Rule

1. A Standard Format plan may subdivide:

    a. one or more parcels with a format of standard and a class of lot or common property

    b. common property that is located outside the building

    c. lots and common property on a building format plan provided that

        i. all the lots in the building are fully cancelled by the plan, and

        ii. the whole of the building is fully contained within the new lot(s), and

        iii. except when terminating a scheme, at least two lots and common property remain in the scheme

    d. the remainder lot or lots that are described on a volumetric format plan (equivalent to #1.a above)

    e. a volumetric lot that is fully contained within a standard format lot, provided that the volumetric lot is fully cancelled.

2. A Standard Format plan may create one or more standard format parcels with a class of:

    i. lot

    ii. common property

    iii. road

    iv. hydrography.

Notes:

1. Item #1.c can't be determined by validation software, therefore if a standard format plan subdivides a building format lot, the rule fails with an exception.

ePlan element
Document:SurveyDocument:surveyFormat
LandXML/Survey/SurveyHeader@surveyFormat

Reason

1. "A standard format plan may not subdivide parcel '<cancelled parcel reference in CIF>'."

2. "A standard format plan may not create parcel '<parcel reference in CIF>'".

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	—

3.1.23 Standard Format Plans (Community Titles Scheme Land)

3.1.23.1 General

Terminology used in this section:
- first CTS; a CTS name exists but no CTS number
- subsequent CTS; a CTS name and CTS number exists.

3.1.23.1.1 First CTS—VR109

When creating a first CTS, a survey must create common property and the CTS must be named in the plan. The CTS number is allocated at lodgement.

This rule is implemented with VR114 (§ 3.1.24.1.1) and VR173 (§ 3.1.24.2.1)

Rule

When creating a first CTS the survey must:

1. create common property; and

2. the CTS must be named in the plan.

The CTS number will be allocated at lodgement.

ePlan element

1. Document:SurveyDocument:Survey:Parcel:Parcel:class
   LandXML/Parcels/Parcel@class

2. LandXML/Survey/SurveyHeader@communityTitleSchemeName

Reason

1. "The survey creates a CTS but does not create a common property parcel."

2. "The survey creates a common property, the CTS name must be included in the survey."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	—

3.1.23.1.2 CTS Name and Number—VR110

This rule is implemented with VR115 (§ 3.1.24.1.2) and VR174 (§ 3.1.24.2.2).

Rule

When reconfiguring CTS land (either a subsequent stage or a reconfiguration) the plan must contain the CTS name and number.

ePlan element

As for VR109 (3.1.23.1.1)
LandXML/Survey/SurveyHeader@communityTitleSchemeNo

Reason

"The plan has a Common Property parcel <parcel name in CIF> with a state of <parcel state in CIF>. The plan must contain both a CTS name and CTS number."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	—

3.1.23.2 Standard Format Plans with Common Property

3.1.23.2.1 Minimum Common Property Area—VR112

Rule

The area of common property must be at least 1m².

ePlan element

As for VR046 (§ 3.1.14.2.4)

Reason

"The area of common property must be greater than one square metre."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.24 Building Format Plans

3.1.24.1 General

3.1.24.1.1 First CTS—VR114

This rule is implemented as part of VR109 (§ 3.1.23.1.1).

Rule

When creating a first CTS the survey must create common property and the CTS must be named in the plan. The CTS number will be allocated at lodgement.

ePlan element

As for VR109 (§ 3.1.23.1.1).

Reason

As for VR109 (§ 3.1.23.1.1).

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.24.1.2 CTS Name and Number—VR115

This rule is implemented as part of VR110 (§ 3.1.23.1.2).

Rule

When reconfiguring CTS land (either a subsequent stage or a reconfiguration) the plan must contain the CTS name and number.

ePlan element

As for VR110 (§ 3.1.23.1.2)

Reason

As for VR110 (§ 3.1.23.1.2)

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.24.2 Volumetric Format Plans with common Property (CTS Land)

3.1.24.2.1 First CTS—VR173

This rule is implemented as part of VR109 (§ 3.1.23.1.1).

Rule

When creating a first CTS the survey must:

1. create common property; and
2. the CTS must be named in the plan.

The CTS number will be allocated at lodgement (also see VR109 (§ 3.1.23.1.1)).

ePlan element

As for VR109 (§ 3.1.23.1.1

Reason)

As for VR109 (§ 3.1.23.1.1)

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.24.2.2 CTS name and number—VR174

This rule is implemented as part of VR110 (§ 3.1.23.1.1).

Rule

When reconfiguring CTS land (either a subsequent stage or a reconfiguration) the plan must contain the CTS name and number. Also see VR110 (§ 3.1.23.1.2,).

ePlan element

As for VR110 (§ 3.1.23.1.2)

Reason

As for VR110 (§ 3.1.23.1.2)

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.1.25 Data integrity

Data integrity checks are usually performed first as they often result in fatal errors. Validation will stop if the internal rule set creates errors (see also VR000 § 3.1.1.1.1).

3.1.25.1 File Structure

3.1.25.1.1 Reference data version (specified by plan)—VR234

Rule

The reference data version specified by the plan must be current for the date when the survey was certified.

ePlan element

LandXML/FeatureDictionary@[name, version]

Reason

"Reference data '<reference data name in the CIF>', version '<version name in the CIF>', was not current on the certification date '<certification date in CIF>'. On the certification date valid versions are: <List of certification dates>."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	N	Fatal	—

3.2 External Validation Rules

All the checks in this section are performed against data held in the department's spatial and titling databases. Where digital data is not available for the check (e.g. the previous plan is not a CIF), a manual check may be required (e.g. rules in § 3.2.3 Accuracy).

3.2.1 Plan Identifier

3.2.1.1 General

3.2.1.1.1 Unique plan identifier—VR181

Further information on this rule and its relationship to the submit process is detailed in § 4.10

Rule

1. The digital plan identifier must not match the identifier:

    a. for a registered or examined plan held by the department

    b. for any other type of plan unless it is being re–submitted.

2. If the plan is being re–submitted, the entity submitting the plan must be the same as the original submission.

ePlan element

Document:documentNo
LandXML/Survey/SurveyHeader@name

Reason
1. "<Plan_number in CIF> with a description of <Plan description in CIF> has status '<status in CISP>' and can't be resubmitted."

2. "<Plan_number in CIF> with a description of <Plan description in CIF> was submitted by <submitting entity> on <submission date>."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

Where a plan uses information compiled from other plans, the plans noted must exist in departmental records. If a plan uses a Form 19, the compiled statement is included in the Form 19. Where a plan uses a Form 14 and includes adopted observations, the compiled statement is in Action Statement #10. Where a plan has a compiled ambulatory boundary, the plan from which it was compiled is included in the source attribute of the ambulatory boundary.

Rule
If a plan contains adopted observations, the plans noted in the compiled statement must exist in departmental records.

ePlan element
Form 19: as for VR036 (§ 3.1.13.1.1)
Form 14: as for VR004 (§ 3.1.3.1.1)

Ambulatory boundary
Document:Survey:Line:IrregularLine:Source
LandXML/Parcels/Parcel/CoordGeom/IrregularLine@source

Reason
For each plan in the certificate that is not in CISP:
"Plan <plan reference in CIF> in compiled statement does not exist in DNRM records."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	DNRM

3.2.2   Areas

3.2.2.1   Completeness of Areas

This rule is complimentary to VR040 (§ 3.1.14.1.4). It checks that the area of balance area parents is the same in the CIF as in the department's DCDB.

Rule
If a created parcel has a balance area, the extinguished lot that allocates to it must have the same area in the CIF as in departmental records.

ePlan element
>As for VR037 (§ 3.1.14.1.1)

Reason
1. For each parcel where the calculated area does not match the plan area:
"The stated area of '<parcel area in CIF>' does not match the department's records."

2. For a balance lot that has no allocation:
"Balance lot '<parcel ref>' has not been allocated."

3. "Error occurred when attempting to retrieve parcels, with plan number '<plan number>', from the department's records"

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.2.3 Accuracy

The following rules are only applied automatically where the previous plan is a digital plan, otherwise they must be manually checked. The first set of rules check distances, the second check azimuths.

3.2.3.1 Correct and Complete Dimensions

3.2.3.1.1 Compiled and original distance comparison—VR184

Rule
1. Adopted distances must be the same as the adopted distance survey.

2. If previous survey is not a CIF, a manual check is required.

ePlan element
>…Parcel:Polygon:Line
>…Parcel/CoordGeom/Line/[Start, End]
>
>LandXML/Survey/ObservationGroup/ReducedObservation@[distanceType, horizDistance, slopeDistance, adoptedDistanceSurvey]

Reason
1. For each compiled or original observation that is not the same as the previous survey:
"Compiled or derived observation '<observation reference in CIF>' does not agree with previous survey '<previous survey plan number>'."

2. "Compiled and derived observations from '<plan reference in CIF>' require a manual check."

3. For compiled observations that are not found in the previous survey:
"Unable to find the compiled or derived observation '<observation reference in CIF>' in the previous survey '<previous survey plan number>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

Rule

1. Balance distances must be verified against the dimension calculated mathematically from the original line in the previous survey.

2. If previous survey is not a CIF, a manual check is required.

ePlan element

As for VR184 (§ 3.2.3.1.1)

Reason

3. For each balance observation that is not the same as the previous survey:
"The calculated distance of '<calculated distance>' for balance observation '<observation name>' does not agree with the distance of '<previous survey distance>' from previous survey '<previous survey plan number>'."

4. "Balance observation requires a manual check."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.2.3.2 Parcels

The following sections check that the adjoining parcels for new lots are the same as the adjoining parcels for cancelled lots and are checked by conducting a new cadastral infrastructure search (CIS) for the cancelled lot.

If inconsistent adjoining lots are found, their previous lot descriptions should be checked as the cadastre may have changed.

Note: if the following rules fail, subsequent validation tests will likely also fail. The reason is checks on previous and adjoining parcels will not be possible as their descriptions do not match parcels held in the department's records.

3.2.3.2.1 Adjoiners—VR189

Note: this validation rule is run after VR190 (§ 3.2.3.2.2).

Rule

Adjoining lot descriptions of created parcels in the survey must be the same as the adjoining lot descriptions of the original parcels in departmental records at the date of certification.

If they are not the same, a check of the inconsistent lot's linkages (i.e. its previous history) must provide an auditable link to the adjoining lots shown on the survey.

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel.[class, name, parcelType]
LandXML/parcels/parcel@[class, name, parcelType]

Reason

1. "The adjoiners identified in the CIF <CIF adjoiner names> do not match departmental records which indicate adjoiners of <DCDB adjoiner names>."

2. "The order of the adjoiners identified in the CIF <CIF adjoiner names> do not match departmental records which indicate the order of adjoiners should be <DCDB adjoiner names>."

3. "One or more extinguished parcels could not be found in departmental records. See VR190 Previous Description for more details."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.2.3.2.2 Previous Description—VR190

This rule is similar to VR189 (§ 3.2.3.2.1 above), but deals with the subject lot rather than adjoiners. Note that if this rule fails, subsequent rules may fail due to the inability to perform searches for previous plans.

Cancelled lot descriptions shown in the survey must be the same as the descriptions in departmental records at the date of certification.

If they are not the same, a check of the inconsistent lot's linkages must provide an auditable link to the previous lot descriptions shown on the survey.

Rule

Cancelled lot descriptions shown in the survey must be the same as the descriptions in departmental records at the date of certification. The rule may fail with one of the following conditions:

1. "Cancelled lot '<lot description in CIF>' was previously cancelled by '<plan number>'."

2. "Cancelled lot '<lot description in CIF>' is not held in departmental records."

ePlan element

Document:SurveyDocument:Survey:Parcel:Parcel.[class, name, parcelType]
LandXML/parcels/parcel@[class, name, parcelType]

Reason

For each cancelled lot where the description fails:

1. "Cancelled lot '<lot description in CIF>' was previously cancelled by '<plan number>'."

2. "Cancelled lot '<lot description in CIF>' is not held in departmental records."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.2.3.3　Position

3.2.3.3.1　Validate control marks—VR237

Rule
1. All control points in the CIF must exist in the Survey Control Database.
2. The mark type for all control points must be the same as in the SCDB.
3. Survey control points with a state of "new" in the CIF must be "uninstalled" in the SCDB.

ePlan element
1. LandXML/CgPoints/CgPoint@name
2. LandXML/CgPoints/CgPoint@state
3. LandXML/CgPoints/CgPoint@pntSurv
4. LandXML/CgPoints/CgPoint<value>
5. LandXML/CgPoints/CgPoint@oID

Reason
1. "Control point <control point reference in CIF> is not in departmental records."
2. "Control mark <mark Id> does not have a type in SCDB."
3. "Mark type is different for control mark <mark Id> with type of '<cif mark type>'." mark in SCDB has a type of '<scdb mark type>'."
4. "Control mark <mark Id> has a mark type of 'other' and must have a description."
5. "Mark <mark Id> with state of '<cif mark state>' in CIF has an installed date in SCDB."
6. "Mark <Id> with state of '<cif mark state>' in CIF does not have an installed date in SCDB."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Rule 1.Fatal Rule 2-3. Exception	1. – 2-3. DNRM

3.2.3.4　Administrative areas

Rules in § 3.1.9 to 3.1.11 check that administrative area information is consistent with reference data, rules in § 3.2.4 check with ATS records.

3.2.4   Previous Title and Previous Plan

3.2.4.1   Title References

3.2.4.1.1   ATS Title Reference(s)—VR199

A title may refer to multiple parcels and a parcel may be covered by multiple titles.

Rule

Title references for cancelled and affected primary interests must:

1. Title referenced must exist in the ATS.

2. The lot reference on the title must match the description of the extinguished lot in the CIF i.e.

   a. if a lot has multiple title references, it must appear on each title

   b. if a title has multiple lots, the extinguished lot must be one of those listed.

3. If the title name attribute value is "to issue", a manual check is required.

ePlan element

Document:SurveyDocument:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@name

Reason

1. "Title '<title reference in CIF>' for parcel '<parcel reference in CIF>' does not exist in the Automated Titles System."

2. "Title '<title reference in CIF>' for parcel '<parcel reference in CIF>' does not match the title in the Automated Titles System."

3. "Title '<title reference in CIF>' for '<parcel reference in CIF>' is '<title name>', a manual check is required."

4. Title '<title reference in ATS>' for parcel '<parcel reference in CIF>' does not exist in CIF.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.2.4.2   Previous Title Endorsements

3.2.4.2.1   Allocation of previous title endorsements—VR200

Rule

1. If there are endorsements on the title, Action Statement #9 (*Endorsements on previous plan or previous title*) must exist in the CIF.

2. If Action Statement #9 (Endorsements on previous plan or previous title) exists then a manual check is required.

ePlan element

    Action statement:
Document:SurveyDocument:Annotation
LandXML/Survey/SurveyHeader/Annotation@type=<annotation type>

    Head of Power:
Document:SurveyDocument:HeadOfPower
LandXML/Survey/SurveyHeader/HeadOfPower

Reason

1. "Endorsements exist on title <title reference>, Action Statement #9 is required."

2. "Action Statement 9 has been used, a manual check is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Manual	DNRM

3.2.4.3   Secondary Parcel Identifier

3.2.4.3.1   New secondary parcel identifier—VR202

The secondary parcel identifier is checked with the secondary parcels noted on the title for the subject lot. As the CIF only includes a reference to the title, it cannot be checked directly.

However, as all secondary interests for a lot can be determined from the allocations table, the identifiers for new secondary interests can be checked in the allocations table. This is to ensure that there is no existing secondary interest with the same identifier being allocated to the same lot **unless** the existing secondary interest is being surrendered.

Existing secondary interests that are being surrendered are noted in Action Statement 'Surrendered Interest' (see Appendix C, #30).

Rule

1. The identifier for a new parcel with a parcel topology of "Secondary" must be unique and not be repeated on the title of the affected lot (see VR023 § 3.1.6.2.1) unless the existing secondary interest on the title with a matching identifier is being surrendered.

2. Where a plan creates a secondary interest in an affected parcel, and a secondary interest for the affected parcel has not been included in the CIF, then a manual check is required.

3. Where a plan cancels a lot that has secondary interests, they must all be shown in the CIF, unless they are being surrendered.

ePlan element

    Identifier:
Document:SurveyDocument:Survey:Parcel:Parcel.name
LandXML/parcels/parcel@name

    Allocations:
Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Reason

1. "Parcel '<parcel reference in CIF>' is not unique for Lot '<parcel reference in CIF>'."

2. "There are secondary interest dealings on the title that aren't in the CIF for affected lot '<parcel reference in CIF>', a manual check is required."

3. "There are secondary interest dealings on the title that aren't in the CIF for cancelled lot '<Parcel reference in CIF>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.2.5 Allocations

The following rule ensures that interests registered on the title are included in the plan and have been allocated to new parcels. Allocations are explained in § 3.1.15 and § 4.6.

3.2.5.1 Registered Secondary Interest

3.2.5.1.1 Registered secondary interests—VR207

Note that existing secondary interests that are being surrendered will not be in the CIF and are noted in Action Statement 'Surrendered Interest' (see Appendix C, #30).

Rule

This rule does not apply where the Head of Power is the *Acquisition of Land Act 1967* or where the title is not available (e.g. it may be "to issue" in ATS).

Where the purpose of survey includes subdivision, amalgamation or resurvey (i.e. a primary type 1 or 2 purpose as specified in VR001 (§ 3.1.2.1.1)), any registered secondary interest encumbering any of the titles to extinguished lots in the survey:

1. must exist in the CIF and;

2. must be allocated.

ePlan element

Secondary interests:
Document:SurveyDocument:Survey:Parcel:Parcel:TitleReferences
LandXML/Parcels/Parcel/Title@titleType

Allocations:
See § 4.6

Reason

1. "There is no secondary interest for '<dealing number from title>' noted on the title for '<subject lot reference>'."

2. "Secondary interest '<secondary interest reference in CIF>' has not been allocated."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.2.6　Ambulatory Boundaries

3.2.6.1　*General*

3.2.6.1.1　*Original information statement—VR210*

Rule

If all of the ambulatory boundaries of the new lot(s) are deduced from original sources, and the metadata on the survey indicates that the origin of the ambulatory boundary is from a previous survey and that previous survey is in a digital format; then a manual check does not need to be performed and an automated validation can be performed.

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Fatal	—

3.2.7　Certification

3.2.7.1　*Registration status of the surveyor*

3.2.7.1.1　*Registration status of surveyor—VR219*

Rule

For the surveying entities in the Form 13, 14, 18 or 19:

1. the signatory role must be registered with its stated registration type by the Surveyors Board of Queensland on the certification date

2. all other roles must be registered with their stated registration type by the Surveyors Board of Queensland on the survey date.

ePlan element
1. LandXML/Survey/SurveyHeader/Personnel
2. As for VR036 (§ 3.1.13.1.1), the ABN/ACN is within the textCertificate attribute.

Reason
1. "The surveying entity '<surveying entity in CIF>' did not have registration type '<regType in CIF>' on the certification date '<certification date in CIF>'."

2. "The surveying entity '<surveying entity in CIF>' did not have registration type 'regType in CIF>' on the survey date '<survey date in CIF>'."

3. "The Name for the Registered Surveyor <RegNo> <SurveyorsName> does not agree with the Surveyors Board Register."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	Y	Y	Fatal	—

3.2.8 Connection to Permanent Marks

3.2.8.1 General

New permanent marks are permanent marks (see VR081 (§ 3.1.17.1.1)) with a state of "new", the related `CgPoint` has a state of a state of "proposed" and an oID of 0 to 999999 inclusive..

3.2.8.1.1 Link to SCDB—VR222

Rule

New permanent marks are checked to ensure that:

1. the number exists in the SCDB and

2. has been issued.

ePlan element

Document:SurveyDocument:Survey:Parcel:Geometry:Line:IrregularLine

LandXML/Parcels/Parcel/CoordGeom/IrregularLine@source

Reason
1. "New permanent mark '<permanent mark number in CIF>' does not exist in the SCDB."

2. "New permanent mark '<permanent mark number in CIF>' has not been issued."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.2.8.1.2 PM sketch exists in SCDB—VR223

Rule

If the CIF contains a connection to a permanent mark and there is no PM sketch noted in the SCDB then perform a manual check.

ePlan element

Document:SurveyDocument:Survey:Parcel:Geometry:Line:IrregularLine

LandXML/Parcels/Parcel/CoordGeom/IrregularLine@source

Reason
"Permanent mark '<permanent mark number in CIF>' does not have a sketch in the Survey Control Database. A manual check is required."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Manual	DNRM

3.2.8.2 *Reduced Level Datum statement*

3.2.8.2.1 *Permanent Mark—VR225*

Rule

If the CIF contains a vertical origin statement (Action Statement #27), the details must agree with data in the SCDB.   Checks that the:

1. PM exists in the SCDB

2. height listed in the statement is consistent with the height quoted in the SCDB.

ePlan element

Document:SurveyDocument:Survey:CoordinateSystem
LandXML/Survey/SurveyHeader/CoordinateSystem@[horizontalDatum, verticalDatum]
 or
LandXML/CoordinateSystem@[horizontalDatum, verticalDatum]

Reason

3. "Annotation statement '<annotation>'' is malformed: <reason malformed>"

4. "The PM '<PM reference in CIF>' used by the '<vertical origin statement>' annotation does not exist in the Survey Control Database."

5. "The PM '<PM reference in CIF>' used by the '<vertical origin statement>' annotation does not have an associated height in the Survey Control Database.

6. The RL of '<RL in CIF>' for PM '<PM reference in CIF>' used for the vertical origin does agree with the Survey Control Database RL of '<RL in SCDB>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.2.9 Meridian Statement

3.2.9.1 *General*

If the previous plan is not a CIF, a manual check is required.

3.2.9.1.1 *Previous CIF Meridian—VR226*

Rule

The plan noted in the meridian statement (if there is one) must exist in departmental records.

ePlan element

LandXML/CoordinateSystem@[datum, description]

Reason

1. "The adopted meridian plan '<plan reference in CIF>' does not exist in DNRM records."

2. "The plan number listed in the meridian statement '<plan number>' is not valid".

Classification	Mandatory	QLD Specific	Error Type	Checked By
Validation	N	Y	Exception	DNRM

3.3 Verification rules

The following rules are implemented as part of the verification process applied when the plan is submitted to the department. These rules are not part of the validation process and are not found in the validation report.

3.3.1 General

3.3.1.1 Plan details

3.3.1.1.1 Lodging entity—VR221

Rule

The entity executing the form 13, 14, 18 or 19 certificate in the CIF must be the same entity that is lodging the survey (i.e. submitting the document).

ePlan element

As for VR219 (§ 3.2.7.1.1)

Reason

1. "The entity submitting the survey '<registered number and type from login credentials>' is not the same as the plan signatory '<signatory registered number and type in CIF>'."

2. "No surveyor details were found for the submitting user '<submitting username>'."

Classification	Mandatory	QLD Specific	Error Type	Checked By
Verify	Y	Y	Fatal	—

3.3.1.1.2 Submission date—VR256

Rule

The value for the submission date in the CIF is dependent on the document status. If the document status is:

1. "submitted", the submission date must be the current date

2. "captured" the submission date must be the current date or earlier.

ePlan element

Document.documentStatus
LandXML/Survey/SurveyHeader@documentStatus

Document.submissionDate
LandXML/Survey/SurveyHeader@submissionDate

Reason

1. "The Survey has a submission date of '<submission date in CIF>', but Surveys with a status of '<document status in CIF>' must have a submission date of '<current date>'."

2. "The Survey has a submission date of '<submission date in CIF>', but Surveys with a status of '<document status in CIF>' must have a submission date on or before '<current date>'."

4 Notes

4.1 Calculations

The following notes apply to mathematic calculations mentioned in this document. For further information, see: Inter-governmental Committee on Surveying and Mapping (ICSM), *Standards and Practices for Control Surveys*, (Sp1), Version 1.7, September 2007.

4.1.1   Significant digits

A definition of significant digits is provided in Appendix A, #145. The number of significant digits for observations need only be sufficient to comply with the requirements for accuracy stated in Ref. 2, § 3.4.2. The number of significant digits for areas is stated in § 3.1.14.1.

4.1.2   Rounding numbers

The following rules are used for rounding numbers.

1. Unless otherwise specified, numbers are rounded as the last step when all other calculations are complete.

2. Rounding is performed based on the number of significant digits (n):

    a.   if the $n+1$ digit is from zero (0) to four (4) inclusive, the nth digit is unchanged

    b.   if the $n+1$ digit is from five (5) to nine (9) inclusive, the nth digit is incremented by one

    c.   digits beyond the $n+1$ digit are ignored

    e.g. when rounding numbers to four significant figures:

    4.1234567 is rounded to 4.123
    4,123.567 is rounded to 4,124
    8,926,501 is rounded to 8,927,000.

4.1.3   Calculating miscloses

A definition of a misclose is provided in Appendix A, #104. For the validation of survey plans, miscloses are calculated for parcels using the observed measurements as a traverse around the parcel. The misclose is the bearing and distance from the start point to its calculated position as the end of the traverse.

4.1.4   Calculating areas

4.1.4.1   Formula

Areas are calculated using a Bowditch adjustment to close polygons, then Simpson's rule using the adjusted co–ordinates.

$$Area = \frac{1}{2}\left(\begin{vmatrix} x_1 & x_2 \\ y_1 & y_2 \end{vmatrix} + \begin{vmatrix} x_2 & x_3 \\ y_2 & y_3 \end{vmatrix} + ... + \begin{vmatrix} x_{n-1} & x_n \\ y_{n-1} & y_n \end{vmatrix} + \begin{vmatrix} x_n & x_1 \\ y_n & y_1 \end{vmatrix} \right)$$

where $|A|$ denotes a determinant and :

$$\begin{vmatrix} a & b \\ c & d \end{vmatrix} = ad - bc$$

Figure 3: Simpson's Rule

4.1.4.2 Rounding areas

Areas must be rounded using the algorithm described in VR037 (§ 3.1.14.1.1). When calculating total areas, in some cases they must be added before rounding, in others they must be rounded first, then added.

4.1.4.3 Rounding areas—part lot and lot in parts

The area of a lot in parts (Appendix A #98) is obtained by adding the calculated area of each parcel, then rounding the total.

The area of a part lot (Appendix A #113) is obtained by calculating and rounding the area of each parcel, then summing the rounded areas to obtain a total area to which no further rounding is applied. This algorithm is used in VR038 (§ 3.1.14.1.2).

4.1.4.4 Rounding areas—road parcels and total area of new road

When checking parcel areas (VR037), if a new road parcel has an area, its area is checked by calculation and rounding as for other parcels.

When checking the total area of new road in action statement A*rea of New Road* (Appendix C #8) (VR041):

1. If all new road parcels have an area, the total area of new road in the action statement is checked with the sum of the stated parcel areas.

2. If at least one new road parcel does not have an area, then the area of all new road parcels are calculated and summed, then the total is rounded and compared to the total area of new road in the action statement.

4.1.4.5 Area of parcels with irregular lines

If the coordinate geometry of a parcel includes an irregular line, the area is not calculated. Area rules affected by this should result in a manual check.

4.1.4.6 Area of parcels with arcs

If the coordinate geometry of a parcel includes an arc, the area is calculated and rounded according to the rules for the type of parcel.

4.1.5 Positional accuracy

Positional accuracy checks ensure that existing points in the CIF are in approximately the correct location and are consistent with the observations in the survey. Points whose position is outside a nominal tolerance indicate the possibility of an error in related observation values or the point identifier (e.g. as the result of a transcription error).

The tolerance for the horizontal position of a point is determined from the positional uncertainty resulting from a survey adjustment and is calculated as:

$$\frac{3\sigma}{2.5}$$

where σ = standard deviation of the adjusted point.

4.2 Through distance

A through distance is a measurement on a straight line that has two or more components and is included in the plan as both the full length and the component parts.
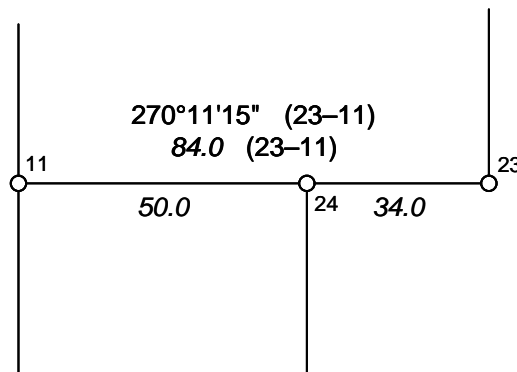

Figure 4: Through distance

In the Figure 4 above, the distance from station 23 to 11 is a through distance (84.0 m) and must equal the sum of the two component distances from stations 23 to 24 (34.0 m) and 24 to 11 (50.0 m).

4.3 Point on intersection

Where the location of a secondary interest over a new parcel is from a previous plan, its position will most likely have been calculated from the previous plan and no monuments placed. Points will be placed in the CIF to represent the intersection of the secondary interest and the new parcel boundaries, these points must be on the boundary of the parcel to an accuracy equivalent to that required if they had been surveyed.
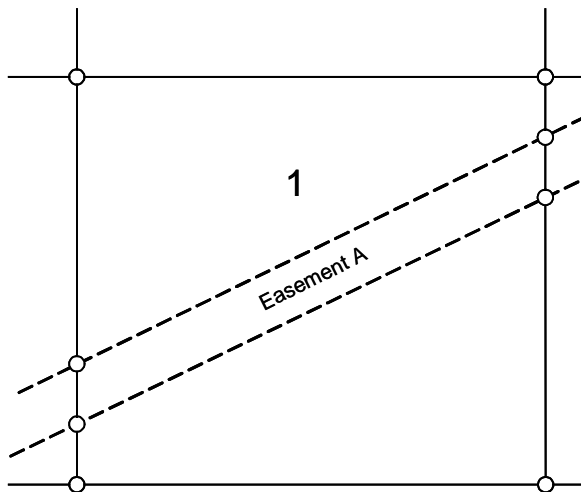
Figure 5: Original parcel with easement
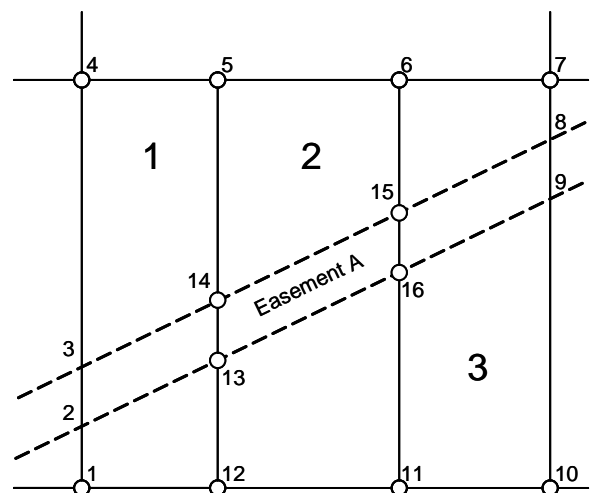
Figure 6: Easement over new lots

In Figure 5, Easement A exists over Lot 1. When Lot 1 is subdivided (Figure 6), the position of the easement over lots 1, 2 and 3 is calculated using data from the previous plan. Distances 12~5 and 11~6 will be measured and distances 12~13, 13~14, 11~16 and 16~15 will be calculated. Intersection points for 2, 3, 8, 9 and 13 to 16 will be provided as coordinate points for the parcels where the easement affects lots 1, 2 and 3.

4.4 Dissolving polygons

The term "dissolving a polygon" means to remove all internal boundaries so that only the external boundary remains.
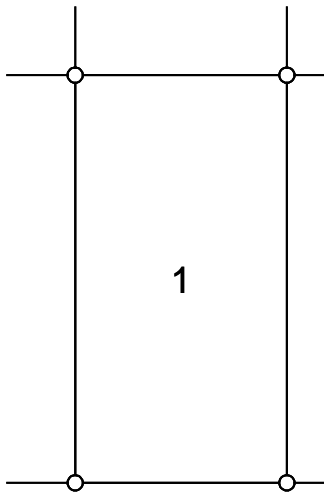
Figure 7: Original lot   **Figure 8: Subdivided lot**   **Figure 9: Dissolved polygon**
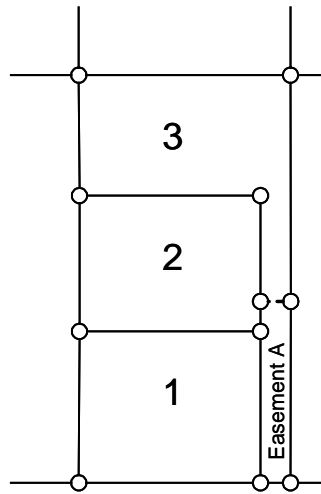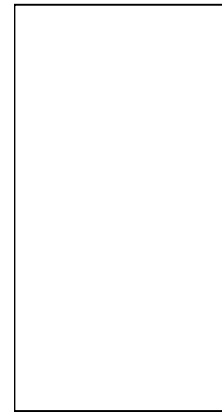
In the above figures, Figure 7 shows the original lot that is subdivided into 3 lots as shown in Figure 8. In Figure 9, the boundaries of the new lots are dissolved to produce a polygon whose dimensions and area are compared to the dimensions and area of the cancelled lot.

4.5 Existing points

All boundary points for extinguished and affected parcels that are in the DCDB must also be in the CIF to ensure they have been appropriately dealt with.
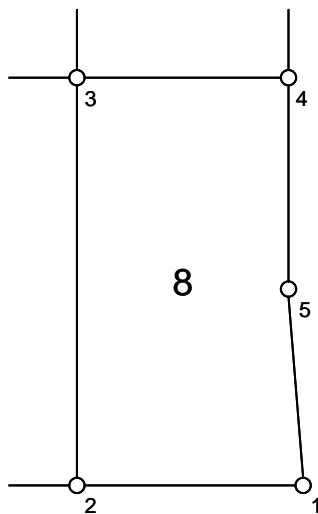
Figure 10: Lot in DCDB   **Figure 11: Lot in CIF**

Figure 10 shows how Lot 8 is defined in the DCDB, Figure 11 shows how it may be erroneously defined in the CIF—point 5 has been omitted.

4.6 Allocations of interests

Allocations are made from existing interests to new interests. Paper plans have an allocations table that conveys this information, which is used to register the interests on the title when registering a dealing.

The following sections explain how allocations are handled in a CIF using LandXML. Rules for when and what kind of a coordinate geometry are required are in § 4.8.5 below.

4.6.1   General rule

The general tests for allocations from primary interests are:

1.   all of the parcels that an interest is allocated to must overlap with the interest

2.   all created parcels must have an allocation from a previous interest
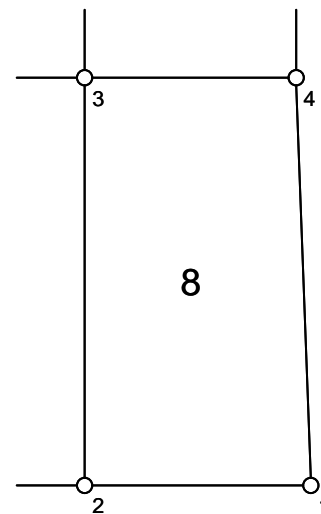
3.   created parcels must be fully covered by allocations.

Secondary interests do not require all of the above tests. Examples of rules related to the above include (but aren't limited to) VR066 (§ 3.1.15.4.1), VR074 (§ 3.1.15.7.2) and VR075 (§ 3.1.15.8.1).

4.6.2   Exceptions

VR012 (§3.1.5.1.4) deals with allocations from affected parcels. An identification survey is the only type of plan that does not have any allocations (surveyPurpose is identification).

There is no allocation of existing interests to new road. The allocation from primary parcel to new road is for the land only. Where all of a parcel is extinguished to create new road, there would be no allocation from the affected original grant parcel to the new road.

4.6.3   Full and partial allocations

An interest is fully allocated if it either:

1.   encumbers all of the parcel to which it is allocated, or

2.   is entirely allocated to a parcel, even if it doesn't encumber all of it.

An interest is partially allocated if:

1.   it encumbers only part of a parcel, **and**

2.   extends beyond the extent of the parcel.

The value of the `Parcels name` attribute (`Parcels@name`) indicates the type of allocation (either partially allocated or fully allocated). If the attribute is missing or has no value, the default is fully allocated.

A Parcel element may contain multiple Parcels elements, one may be for fully allocated interests and another for interests that are partially allocated.

4.6.4 New parcels

Where an existing primary parcel is extinguished and new primary parcels are created, an allocation must be made from the extinguished parcel to the new parcels. This is implemented by parcel elements within the exiguities parcel that reference created parcels, e.g.

```
<Parcel name="9/RP1234" state="extinguished" ...>
  <Center .../>
  <CoordGeom>...</CoordGeom>
  <Parcels>
     ...
    <Parcel name="47CARLISLE" pclRef="47CARLISLE"/>
    <Parcel name="1/SP7890" pclRef="1/SP7890"/>
    <Parcel name="2/SP7890" pclRef="2/SP7890"/>
  </parcels>
</parcel>
```

In the above XML snippet, lot 9 on RP 1234 is extinguished and its area allocated to lots 1 and 2 on SP7890. Parcel elements for lots 1 and 2 on SP7890 must exist elsewhere in the CIF. The amount of lot 9 that is allocated to each parcel is determined spatially by the intersection of the polygons representing the parcels.

4.6.5 New secondary interests

Where a new secondary interest is created, there must be an allocation from the affected parcel to the secondary interest. If the new secondary interest is created in conjunction with new primary parcels, there must be an allocation from both the extinguished and created primary parcels to the new secondary interests.

The allocation is implemented as for § 4.6.4 above.

4.6.6 Existing secondary interests

Existing interests that affect new parcels must have an allocation from the existing interest to the new parcels (see § 3.1.15).

Where the existing secondary interest has a spatial element (e.g. an easement or an administrative advice that doesn't cover the entire parcel), the allocation is made in the parcel element as for § 4.6.4 above.

Where there is no spatial element (e.g. an administrative advice), the allocation is made by a title element in the parcel that has the existing interest. There is no separate element.

The equivalent of an allocations table in LandXML is the inclusion of a parcels element within the parcel that is affected or extinguished that has links to the parcels to which the interest is being allocated.

e.g. where lot 2 on RP1234 is subdivided into lots 1 and 2 on SP7890, the extinguished lot will have a structure like:

```
<Parcel name="2/RP1234" state="extinguished" ...>
  <Center .../>
  <CoordGeom>...</CoordGeom>
  <Parcels>
    <Parcel name="47CARLISLE" pclRef="47CARLISLE"/>
    <Parcel name="1/SP7890" pclRef="1/SP7890"/>
    <Parcel name="2/SP7890" pclRef="2/SP7890"/>
  </parcels>
</parcel>
```

Note that the …/Parcel/Parcels/ element is also used for administrative boundaries, so its existence doesn't necessarily infer that interests in the lot are being allocated.

4.6.7 Existing interests noted on titles

Interests such as mortgages that are noted on the title are included as a title element in a parcel element. They are allocated to the parcels that the extinguished parcel is allocated to.

```
<Parcel ...>
  <Center .../>
  <CoordGeom>...</CoordGeom>
  <Title titleType="mortgage" name="21214128"/>
  <Parcels>
    <Parcel ...>
  </Parcels>
</parcel>
```

The following cases may occur:

1. If an encumbrance is noted on the title but is not allocated in the CIF, an exception is raised and the surveyor may respond that the encumbrance is to be released or surrendered prior to the lot being extinguished (i.e. as a component of a dealing that has been, or will be, lodged).

2. If the encumbrance affects an area other than the created parcel (it may be larger or smaller), a parcel element must be included in the CIF to show its extent.

3. If no parcel element is included for the encumbrance, it is assumed to be over the entire parcel.

4.6.8 Mortgage involving common property

A mortgage cannot be allocated to common property (VR069 § 3.1.15.5.1). Therefore, where a lot that is encumbered by a mortgage is allocated to CP, a separate allocation is required for the mortgage that excludes the CP. In the following example, lot 1 is subdivided into lots 1, 2 and CP.
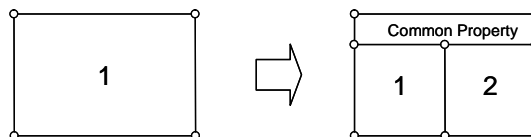
Figure 12: Mortgage and common property

The above is represented in the CIF by allocating from lot 1 to new lots 1, 2 and CP and allocating the mortgage only to new lots 1 and 2.

```
<Parcel name="1/RP10370" state="extinguished" parcelFormat="Standard"
 class="Lot" parcelType="single">
    <CoordGeom>...</CoordGeom>
    <!-- Allocation of extinguished parcel -->
    <Parcels>
        <Parcel name="1/SP222696" pclRef="1/SP222696"/>
        <Parcel name="2/SP222696" pclRef="2/SP222696"/>
        <Parcel name="CP/SP222696" pclRef="CP/SP222696"/>
    </Parcels>
    <!-- Allocation of mortgage (excludes CP) -->
    <Parcels name="hidden-706025546">
        <Parcel name="1/SP222696" pclRef="1/SP222696"/>
        <Parcel name="2/SP222696" pclRef="2/SP222696"/>
```

```
        </Parcels>
        <Title name="706025546" titleType="mortgage"/>
        <Title name="21263036" titleType="title"/>
    </Parcel>
```

4.7 Allocation of local government areas

Where created parcels are in more than one LGA, there must be a parcel element for each LGA with its spatial extent and links to the created parcels from the LGA that they are in (see VR065 (§ 3.1.15.3.2)), e.g.

```
  <Parcel useOfParcel="Local Government" class="Administrative Area"
   parcelFormat="Standard" state="existing" parcelType="single"
   name="7340WHITSUNDAY REGIONAL" desc="WHITSUNDAY REGIONAL">
        <CoordGeom>...</CoordGeom>
    <Parcels name="partially allocated">
      <Parcel name="9/SP215842" pclRef="9/SP215842" area="500"/>
    </Parcels>
  </Parcel>
```

Note also that in these cases, the local government area must have a spatial element (see VR247 § 3.1.15.3.1).

Where all created parcels are in one local government area and that LGA is the only one in the CIF, links from the LGA to the created parcels may be omitted.

Where a created parcel is in more than one LGA, the area of the parcel in each LGA must be stated in its link fom the LGA parcel (see VR248 § 3.1.15.3.3).

4.8 Rules for subdivision and amalgamation

The following section contains tables that indicate the actions that can be taken for particular plan formats to support VR108 (§ 3.1.22.1.1).

4.8.1   ePlan elements

The attributes used to determine the actions that a plan can take are:

Survey (plan) format (../Survey/SurveyHeader@surveyFormat):
administrative, building, explanatory, identification, standard, volumetric

Survey purpose (../Survey/SurveyHeader@surveyPurpose):
amalgamation, covenant, easement, identification, lease, permit, profit a prendre, resurvey, subdivision

Parcel format (../Parcels/Parcel/@parcelFormat):
building, restricted, standard, volumetric

Parcel class (../Parcels/Parcel/@class):
administrative area, building, caveat, common property, covenant, easement, footprint, hydrography, lease, licence, lot, permit, profit a prendre, road.

Parcel state (../Parcels/Parcel/@state):
adjoining, affected, created, encroached, existing, extinguished, proposed, referenced

4.8.2 Survey format and purpose

The following table indicates the survey purposes that are applicable to various plan formats (.../Survey/SurveyHeader@surveyFormat).

Table 4: Survey format and purpose

Plan format		Survey purpose								
		P1		P2	P3	S1				S2
		subdivision	amalgamation	resurvey	permit	easement	lease	covenant	profit a prendre	identification
standard		✓	✓	✓		✓	✓	✓	✓	
building		✓	✓	✓		✓	✓	✓	✓	
volumetric		✓	✓			✓	✓	✓	✓	
explanatory	LTA					✓	✓	✓	✓	
	LA					✓		✓		
administrative					✓					
identification										✓

Where:

- LTA is the Land Title Act 1994
- LA is the Land Act 1994
- P1 is a Primary Purpose Type 1 (Subdivision, Amalgamation)
- P2 is a primary Purpose Type 2 (Resurvey)
- P3 is a Primary Purpose Type 3 (Permit)
- S1 is a Secondary Purpose Type 1 (Easement, Covenant, Lease, Profit a Prendre)
- S2 is a Secondary Purpose Type 2 (Identification)

4.8.3 Parcel formats that plan types can subdivide

The following table shows the parcel formats that can be subdivided by various plan formats (.../Survey/SurveyHeader@surveyFormat).

Table 5: Parcel formats that plan types can subdivide

Plan Format	Can subdivide parcel with format:		
	Standard	**Building**	**Volumetric**
Standard	One or more parcels with a class of: 1. lot[1] 2. common property, provided that: a. if a building footprint is included in the CIF, the created lot is outside the building footprint 3. road 4. hydrography	Provided that all of the BFP lots: 1. Are subdivided (i.e. the BFP is fully cancelled), and 2. Fit within the new standard lot(s)	Provided that the volumetric lot: 1. is fully contained within a standard format lot, and 2. is fully cancelled
Building	One or more lots, common property	One or more Building format lots and Common Property	Any Volumetric Lot
Volumetric	One or more lots, common property	1. All the lots of a BFP (i.e. the BFP is fully cancelled), provided all of the BFP lots fit within the new standard lot(s) 2. Where a part of a scheme has to be excised from the scheme in which case the plan must deal with the whole lot. (i.e. excising a lot from a scheme for a purpose inconsistent with the scheme). This may also include part of the common property of a scheme.	Any Volumetric Lot or common property where the common property is a volumetric lot.
Administrative	None	None	None
Explanatory	None	None	None
Identification	None	None	None

---

[1] Includes the remainder lot of a volumetric format parcel

4.8.4 Parcel formats that plan types can create

The following table indicates the parcel formats that plan formats can create.

Table 6: Parcel formats that plan types can create

Plan Format	Can create parcels with format:		
	Standard	**Building**	**Volumetric**
Standard	One or more parcels with a class of: 1. lot 2. common property 3. road 4. hydrography	No	No
Building	1. The common property of a building format lot is a standard format lot 2. The private yard of a building format lot is a standard format lot 3. One Standard format remainder lot that is not part of the scheme can be created. In addition New Road and reserves can be created. Hence more than one standard format lot can be created but all but one must be either Public Use Land or Road.	Must create at least 2 lots and Common Property unless a subdivision or amalgamation of an exist building format lot or common property.	A parcel with a class of common property and a format of volumetric provided that: 1. the created lot is within a parcel with a format of volumetric
Volumetric	Must create a parcel with a class of lot and a use of remainder lot	No	One or more
Administrative	No	No	No
Explanatory	No	No	No
Identification	No	No	No

4.8.5 New road and hydrography and the plan description

Rules VR009 to VR012 (§ 3.1.5.1.2 to § 3.1.5.1.4) check that the plan description is consistent with parcels created, affected and extinguished by the survey. This works where the parcels have a unique name (such as lots) but road and hydrographic parcels aren't necessarily given unique names in the plan description.

One or more road parcels may be described in the plan description as "…and new road", or may not be noted in the plan description at all. Therefore the description of road parcels in the CIF can't be matched with their description in the title.

Similarly, hydrography parcels are usually only created for the purpose of creating a new primary parcel of some other class, therefore "new" hydrography parcels will appear with a status of extinguished and will allocate to one or more created parcels. Such parcels are simply described as "…cancelling USL being part of the Mary River."

4.9 Parcel geometry

4.9.1 Background

Various elements within a CIF have a spatial extent. How the spatial extent is shown depends on the type of parcel and the actions that are performed on it. For example, rule VR055 (§ 3.1.14.3.1) checks that all secondary interests have a spatial extent, other rules (such as VR061) check that they are accurate. Failure leads to an exception as the extent of an interest may be defined in documents other than the survey plan (CIF).

4.9.2 How shown

The spatial extent of a parcel may be:

1. Full—a closed polygon that includes all points in the parcel boundary (see also § 4.9.3 below).

2. Partial—a closed polygon that shows a sufficient amount of the parcel to satisfy visualisation and spatial testing requirements, e.g. allocation of an existing easement.

3. Line—two or more points and a center point that satisfy visualisation and spatial testing requirements, e.g. allocations to a local authority or locality.

For subject parcels, the spatial extent must always be fully shown. For other parcels, the spatial extent may be partial at the discretion of the submitter.

In the CIF, a full parcel geometry (closed polygon) may be:

```
<Parcel class="Lot" parcelFormat="Standard" state="existing"
parcelType="single" name="23/RP739345" area="20080.00"
desc="61619/161 ">
    <Center pntRef="CENTRE 7"/>
    <CoordGeom>
        <Line>
            <Start pntRef="D"/>
            <End pntRef="BC"/>
        </Line>
        <Line>
            <Start pntRef="BC"/>
            <End pntRef="AR"/>
        </Line>
        <Line>
```

```
            <Start pntRef="AR"/>
            <End pntRef="AO"/>
        </Line>
        <Line>
            <Start pntRef="AO"/>
            <End pntRef="D"/>
        </Line>
    </CoordGeom>
</parcel>
```

A line geometry (minimum 2 points and centre) may look like:

```
<Parcel useOfParcel="County" class="Administrative Area"
parcelFormat="Standard" state="existing" parcelType="single"
name="47CARLISLE" desc="CARLISLE">
    <Center pntRef="CENTRE 7"/>
    <CoordGeom>
        <Line>
            <Start pntRef="D"/>
            <End pntRef="BC"/>
        </Line>
        <Line>
            <Start pntRef="BC"/>
            <End pntRef="AR"/>
        </Line>
    </CoordGeom>
</parcel>
```

The following table identifies when a parcel coordinate geometry element is required:

Table 7: When to include parcel coordinate geometry

Parcel Class	State	Coordinate Geometry	When required
Common Property Footprint Lot Road	Created Extinguished	Full	Always
Common Property Footprint Lot Road	Affected Existing	Full Part Line	Always
Lot where Title@titleType="original grant"	Affected Existing	Full Part Line	Only required if the plan has more than one original grant lot.
Administrative Area	Existing	Part Line	Only required if the plan has more than one administrative area with the same useOfParcel (e.g. two or more local authorities)
Building	Affected Created Existing	Full	Always

Parcel Class	State	Coordinate Geometry	When required
Covenant Easement Lease Permit Profit a Prendre	Created	Full	Always
Covenant Easement Lease Permit Profit a Prendre	Surrendered	None	Never
Covenant Easement Permit Profit a Prendre	Affected Existing	Full Part	When parcel affects a created primary parcel or lease. Geometry must show the extent to which the parcel affects a created primary parcel or lease.
Lease	Affected	Full	Always
Lease	Existing	Full	Always unless Action Statement type *New Secondary Interest* (Appendix C #**Error! Reference source not found.**) used.

4.9.3　If affecting all of a parcel

Where a secondary interest affects all of a parcel, it does not require a separate coordinate geometry. The inclusion of the interest with no geometry in the encumbered parcel infers that it covers the entire parcel and the encumbered parcel's coordinate geometry can be used for spatial checks involving the interest. e.g.

```
<Parcel name="81/SP109009" class="Lot" state="extinguished"...>
  <Center pntRef="CENTRE 10" />
  <CoordGeom>
    ...
  </CoordGeom>
  <Parcels>
    <Parcel name="1/SP216464" pclRef="1/SP216464" />
    <Parcel name="2/SP216464" pclRef="2/SP216464" />
  </Parcels>
  <Title name="707505115" titleType="mortgage" />
  <Title name="50437738" titleType="title" />
  ...
</Parcel>
```

In the above snippet, the mortgage does not have a separate associated coordinate geometry element, therefore it is interpreted as encumbering the entire extinguished lot (81/SP109009) and is allocated to the same created parcels (1/SP216464 and 2/SP216464).

If the secondary interest continues to exist after the created lots are subsequently subdivided or amalgamated, there may be a need to include a spatial element for the interest if all of its boundaries no longer coincide with boundaries of created lots. In that case, a coordinate geometry is required (this may be the same as the parcel that was originally encumbered).

4.9.4   If affecting part of a parcel

Where a secondary interest affects part of a parcel, a spatial extent must be included as a parcel element with a spatial extent. Encumbrances such as mortgages and administrative advices over part of a parcel may be indicated as follows:

```
<!-- Created parcel affected by an existing administrative advice -->
<Parcel class="Lot" state="created" name="1/RP868531" ...>
  <CoordGeom>
    ...
  </CoordGeom>
  ...
</Parcel>
<!-- Existing administrative advice affecting above parcel -->
<Parcel class="admin advice" state="existing" name="A/NOPLAN" ...>
  <CoordGeom>
    ...
  </CoordGeom>
  <Title name="15021230" type="admin advice" />
  <Parcels>
    <Parcel pclRef="1/RP868531" name="1/RP868531" />
  </Parcels>
  ...
</Parcel>
```

4.10 Plan submission

The following checks of the plan number are made when a plan is submitted
(§ 3.2.1.1.1 Unique plan identifier—VR181):

1. If a plan with the same number has not been submitted previously, the rule passes.

2. If a plan with the same number has been submitted previously and:

    a. the plan has a status that can't be resubmitted, a fatal error is reported and the plan can't be submitted

    b. the plan has a status that can be resubmitted and the submitting entity is the same as previously, the plan is assumed to be a re–submission

    c. the plan is a re–submission (from #2.b above) and the surveyor is not the same as previously, a fatal error is reported.

At the time of writing, the plan statuses that can be resubmitted are:

1. submitted

2. unknown

3. withdrawn

4. requisitioned.

A plan with any other status cannot be resubmitted.

4.11 Community Titles Scheme (CTS)

The following sections provide examples and explanation of what a building format plan can subdivide and create.

4.11.1   Creating

Building format lots are created by a building format plan. The common property associated with a building format plan (BFP) may have a format of standard or building (see § 4.11.3 below).

4.11.2   Subdividing

A BFP that subdivides a building format parcel must create:

1. two or more building format lots, or

2. one or more building format lots and one common property (CP) parcel, or

3. one CP if it fully extinguishes a building format lot (e.g. convert a garage into common property).

4.11.3   Common Property

A BFP may only create one common property parcel per CTS. If it is creating a CTS that is a subsidiary scheme (see § 4.11.4.2), it may also create CP for the principle scheme (see SP210201). In all other cases, it may only create one CP parcel.
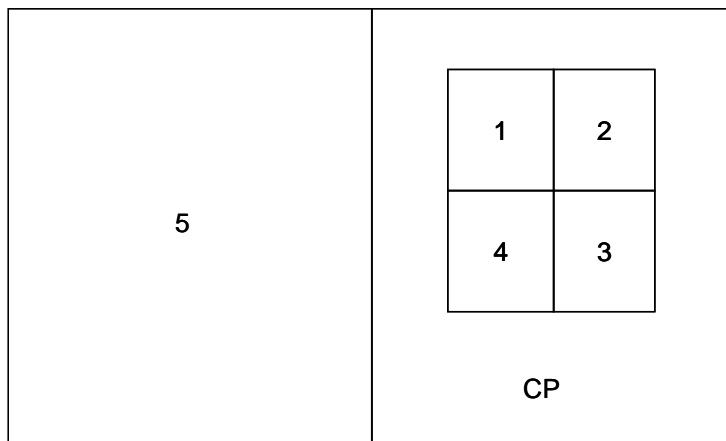

Figure 13: Building format plan—creating common property

In the plan above:

1. If a BFP is creating a first CTS, it must create at least two building format lots and at least one CP parcel. It may also create standard format lots (e.g. lot 5), but it may only create one such lot that doesn't have a use of public use land or is not road.

2.   If a BFP is creating a subsidiary CTS, it may also create another CP parcel that belongs to a primary CTS (note that it must be creating a CTS, not subdividing an existing scheme)

3. If a BFP is a subsequent plan of a staged subdivision, it may only create a single CP parcel that belongs to the CTS of the plan (the CP might be a multi–part parcel)

4. If a BFP is a subdivision of an existing CTS, it may only create CP in the scheme it is subdividing even if it's a subsidiary scheme

It is conceivable (though probably practically impossible) to create a building format plan where the entire base lot is covered by building format lots. In this case, common property is created above and below the building format lots and therefore will be in the plan description even though no CP parcel is shown on the plan.

4.11.4　Types of development

4.11.4.1　Staged development

A staged development creates a single CTS and then subsequently creates new parts of that same CTS. If the plan in Figure 13 was staged scheme, Lot 5 may be later subdivided and added to the scheme as shown below.
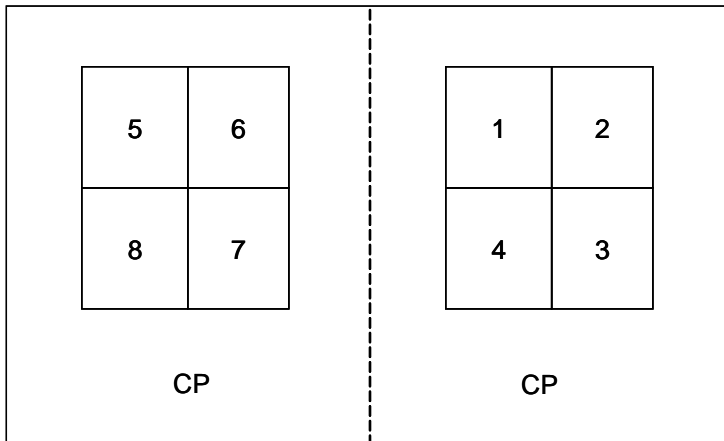

Figure 14: Building format plan—Staged scheme

In the above plan, the new CP and BFP lots are added to the existing scheme.

4.11.4.2　Layered development

A layered development creates a primary CTS, then creates subsidiary CTSs. The first plan for a layered scheme will create a primary CTS with common property, a subsidiary scheme with lots and common property (the right side of Figure 15 below) and a remainder standard lot (Lot 5 below) on the same survey.

The remainder lot may be subsequently subdivided into another subsidiary CTS with building format lots and CP and may also add CP to the primary scheme. Note that only the first plan of a CTS may create a CP for the primary scheme in this way.
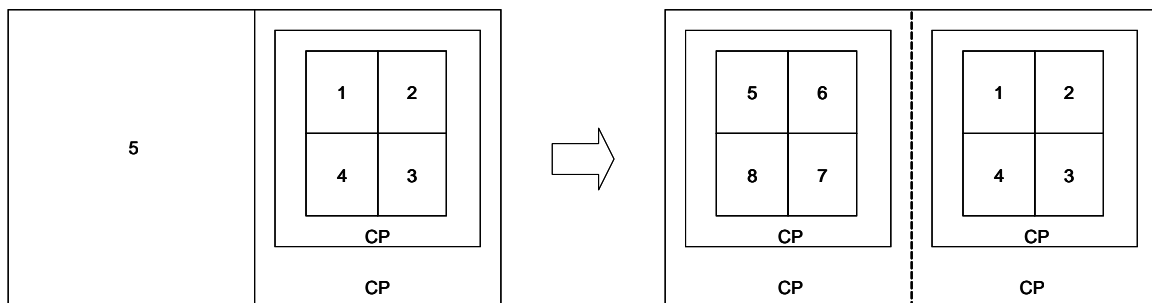

Figure 15: Building format plan—Layered scheme

This strategy can be employed numerous times, so that each subsidiary scheme leaves a remainder lot for future schemes and adds to the primary CP.

Appendix A   Glossary

Sourced from:

1. DNRM, *Cadastral Survey Requirements*, v 6.0, 1 August 2010

2. DNRM, *Registrar of Titles Directions for the Preparation of Plans*, 28 February 2013

#	Term	Definition
1.	Act	A decree, edict, law, statute, judgment, resolve or award.
2.	Action	A proceeding instituted by one party against another.
3.	Adjoiners	Parcels of land sharing a common boundary with a subject parcel. Adjoiners can be lots, natural features or roads.
4.	Adopted	Accepted as evidence for reinstatement.
5.	Administrative Interest	
6.	AGD84	AGD84 - Australian Geodetic Datum 1984.
7.	AHD	AHD (Australian Height Datum).
8.	Allocation	Interests in land are carried forward from one title to the next through the allocation of interests of old lots to new lots. These interests may include easements, portions, mortgages, etc.
9.	Ambulatory boundary	A natural boundary defined by a watercourse (tidal or non-tidal) and subject to accretion or erosion.
10.	AMG	AMG (Australian Map Grid).
11.	Annotation	A notation or action statement required for clarification or administrative action.
12.	Approval	Indicates consent of authorised persons to the survey action.
13.	Approver	An entity having a legal interest in the subject parcel.
14.	Archive	A place where public records or other historical documents are kept.
15.	ATS	ATS (Automated Titling System) is the computerization of the Torrens Title System of Registration for all Freehold and Leasehold dealings in land in Queensland.
16.	Audit	To check aspects of a survey or cadastral information file (CIF) to ensure that they conform to established departmental requirements.
17.	Azimuth	A horizontal angle reckoned clockwise from a specified meridian.
18.	Base Parcel	The base parcel on a Building Format Plan is the land that is subdivided by the plan exclusive of any new road, public use land and the remainder standard format lot created on that plan.
19.	Bearing	Direction of a line in relation to a specific reference datum, measured clockwise and expressed in angular units (reference datum could be grid north, true north, etc.
20.	BLIN	Basic Land Information Network.
21.	Boundary Node	The intersection of two or more cadastral boundaries.
22.	Bowditch Adjusted Area	The area of a parcel calculated after first adjusting the dimensions for errors. The parcel's dimensions are adjusted using an algorithm which apportions errors amongst observations to produce a perfect closure. This process is known as a Bowditch Adjustment. The area calculated after applying the Bowditch adjustment is the Bowditch adjusted area.
23.	BPA	Beach Protection Authority.
24.	Building Footprint	The vertical projection of the outermost projection of a building onto a plane at ground level. This footprint is exclusive of any eaves, guttering, projecting balconies, courtyards and other incidental projections.

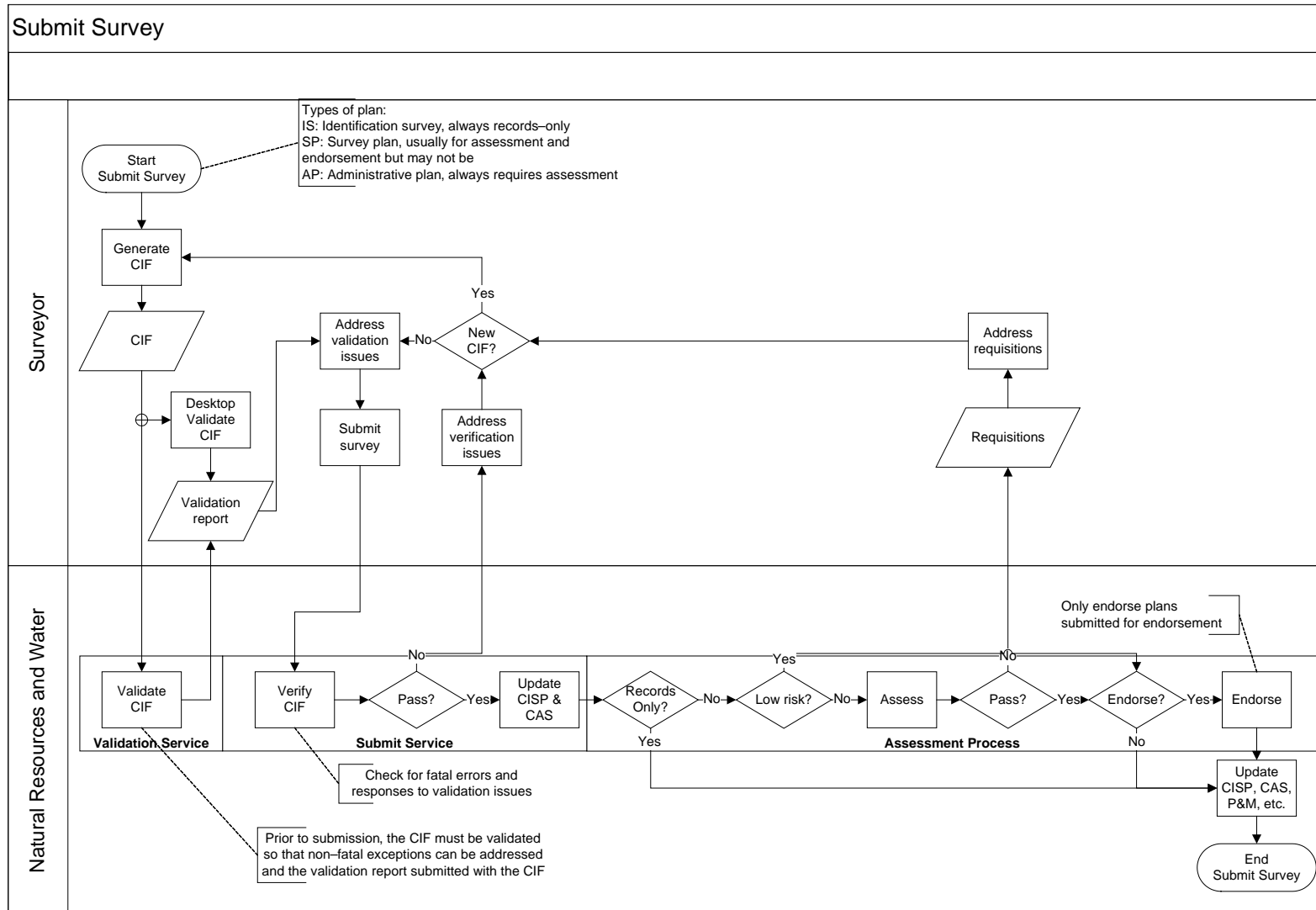| #	Term	Definition
25.	Building Format Plan	Building Format Plans create parcels within structures. Parcels are defined and limited by floors, walls, ceilings and other structural elements, other than some special cases. Register of Titles Directions for the Preparation of Plans (RTDPP)
26.	Building Management Statement	A BMS is an instrument by which the registered owners of lots contained in or that wholly contain a building, agree to reciprocal provisions that benefit and burden their lots.
27.	CAD	Computer Aided Drafting.
28.	Cadastral Boundary	A line between two cadastral parcels.
29.	Cadastral Corner	The intersection of two cadastral boundaries.
30.	Cadastral Node	Point of interest in the cadastre.
31.	Cadastre	Official record of property, with details of boundaries, ownership, etc.
32.	Calculated	Computed (as opposed to directly measured).
33.	Cancelled	A parcel that is replaced by one or more new parcels is described as being cancelled (see also "extinguished", #80).
34.	Cancelling clause	The cancelling clause in a plan description describes the lots being cancelled (or "extinguished") by the plan. It provides a linkage to previous parcels.
35.	Caveat	A caveat is a notice to the Registrar which, subject to some exceptions, has the effect of prohibiting the registration of an instrument (unless specifically excluded in the caveat) affecting the interest claimed by the caveator until the caveat is withdrawn, removed, lapses or is cancelled (source: Land Title Practice Manual (LTPM).
36.	Caveatee	For a lot over which a caveat has been lodged, means a registered proprietor of the lot or someone (other than the caveator) who has an interest in the lot (§ 4 of the Land Title Act 1994). Source: LTPM.
37.	Caveator	For a lot over which a caveat has been lodged, means a person in whose favour the caveat is lodged (§ 4 of the Land Title Act 1994). Source: LTPM.
38.	CIF	Cadastral Information File.
39.	CIF Validation Report	A report which details the results of the CIF Validation process.
40.	CIF Views	Visualisation of subsets of CIF data to satisfy particular user requirements.
41.	CISP	Computer Inventory of Survey Plans, a textual database of all survey plans in DNRM.
42.	CMS	Community Management Statement.
43.	Compiled	Derived from original source document(s).
44.	Compiled Survey	A survey without any field survey component. All observations are derived from original source documentation.
45.	Connection	Joined by an observation.
46.	Consultant	A registered surveyor endorsed by the Surveyors Board as a consultant.
47.	Co–ordinates	One of a set of N numbers designating the location of a point in N-dimensional space.
48.	Coplanar	A line belonging to more than one plane.
49.	Council	Local Government Authority.
50.	County	A territorial division exercising administrative functions.
51.	Courtyard	Part of a building format lot paved and usually at ground level, and which immediately adjoins another part or parts of the same lot on the same level and usually no greater in area than that lot. The features bounding a courtyard need not be a wall, but should be sufficiently clear to define the area. RTDPP
52.	Covenant	A written agreement between a landholder and the state or a statutory body in which either party promises to perform or refrain from doing certain actions.
53.	CTS	Community Titles Scheme.

#	Term	Definition
54.	Cubic Space	The volume contained within a Volumetric Parcel.
55.	Curve	An arc of a circle defining a boundary.
56.	Datum	A point, line, or surface used as a reference.
57.	DCDB	Digital Cadastral Database. A seamless graphical representation of cadastral boundaries with other attributes.
58.	DCDB Update	Process of adding a newly registered plan into the DCDB.
59.	DCDB Upgrade	Process of improving the spatial accuracy of the DCDB.
60.	Dealing and Dealing number	An internal name and unique number allocated to an instrument when it is lodged in the land registry.
61.	Delegate	Someone delegated to act for or represent another or others.
62.	Destroyed	Missing or damaged beyond use.
63.	Dimension	The bearing and length of a cadastral boundary.
64.	Dissolve	1. Law: to deprive of force, annul 2. Graphics: remove internal lines so that only a boundary remains.
65.	Distance	The length of the shortest path between two points.
66.	Document	Structured data file.
67.	Document Submitter	An entity submitting a document to the Document Approval System.
68.	DNRM	Department of Natural Resources and Mines.
69.	DXF file	A drawing exchange file for the transfer of CAD drawings.
70.	EARL	Electronic Access for Registry Lodgement project.
71.	Easement	A right enjoyed by another entity over the lands of a registered owner. The Dominant Tenement is the land to which a right is granted. The Servient Tenement is the land that is burdened by the granting of a right to another parcel of land. For easements in gross there is no dominant tenement and the easement is in favour of a public utility provider.
72.	Ellipsoid	Geodesy: a mathematical figure formed by revolving an ellipse about its minor axis. It is often used interchangeably with spheroid (#148).
73.	eLVAS	The eLVAS is the Electronic Land and Vegetation Administration System managed by the Land Management and Use Program of the Department of Natural Resources and Mines.
74.	Embedded Image	An image of a document that is stored within a CIF.
75.	Encroachment	An improvement on a parcel that extends over the parcel boundary onto an adjoining parcel.
76.	Encumbrance	A burden or charge upon property.
77.	EPA	Environmental Protection Agency.
78.	Examination	To check aspects of a survey or CIF to ensure that they conform to established departmental requirements.
79.	Existing building	A building that was completed before the commencement of the Body Corporate and Community Management Act 1997. Date of commencement 13:7:1997.
80.	Extinguished	1. The same as "cancelled" (see #33) 2. The value of the LandXML parcel@state attribute for a cancelled parcel.
81.	Face	Any one of the bounding surfaces of a solid figure.
82.	Footprint	The vertical projection of the outermost bounds of a volumetric parcel onto a plane approximately at ground level.
83.	Freehold	Tenure of real property by which an estate of inheritance in fee simple or fee tail or for life is held.
84.	Gazetted	Announced in an official government journal.
85.	GDA94	GDA94 - Geocentric Datum of Australia 1994.

#	Term	Definition
86.	Geodesy	The science and mathematical calculations of the shape and size of the Earth.
87.	GPS	Global Positioning System.
88.	Head Of Power	Legislation or authority under which a survey is prepared.
89.	ICSM	Intergovernmental Committee on Surveying and Mapping. The ICSM is made up of representatives from all the Australian States and Territories, the Federal Government and New Zealand. Members are responsible for government surveying and mapping functions in their jurisdiction. The ICSM's role is to provide leadership, coordination and standards for surveying, mapping and charting, and assembling and maintaining national framework data sets. Framework data includes geodetic, topographic, cadastral, street addressing, tides and sea level and geographical names.
90.	Interested Party	A party nominated by the project manager who has a legitimate interest in the survey or dealing, but will not be approving the survey or dealing.
91.	Land Registry	The repository for all records lodged in the register.
92.	LandXML	An XML file used for the interchange of engineering and surveying data
93.	Least Squares Adjustment	A rigorous mathematical process to adjust sets of observed data, to identify redundant data, to isolate errors in data and to determine the overall accuracy of the data set.
94.	Locality	A particular neighbourhood, place, or district.
95.	Lodged	When the particulars of an instrument are recorded in the freehold land register.
96.	Lodger	An entity eligible to lodge documents under the Land Title Act 1994.
97.	Lot	A separate, distinct parcel of land for which an interest in may be created. A lot may consist of one or more parcels.
98.	Lot in Parts	A lot in parts is a multipart lot where only the multipart parcel has an area shown, the parts do not (*cf* #113 Part Lot).
99.	Lot On Plan	A unique identifier for a parcel of land.
100.	LTPM	Land Title Practice Manual.
101.	Meridian	The bearing datum for bearings shown on a survey.
102.	MGA	MGA (Map Grid of Australia).
103.	Microstation	Microstation is a CAD package produced by Bentley Systems Pty Ltd. This is the current package used to update and maintain the Digital Cadastral Data Base (DCDB) in Queensland.
104.	Misclose	The amount by which an observation or combination of observations fails to meet a geometric condition. The observations for a parcel have a misclose if the stated coordinates of the start point differ from the coordinates calculated using the bearings and distances of the boundary lines as a traverse.
105.	Monument	A physical object associated with a node.
106.	Node	A point that may be a cadastral or boundary node.
107.	Observation	A survey measurement.
108.	Observations	Measured or derived quantities defining the spatial relationship between survey points.
109.	Observed	Measured, as opposed to derived or compiled.
110.	Order of Priority	The order in which a set of documents must be lodged so that registration can occur.
111.	Parcel	Surveying: a lot, part lot, easement, lease, profit-a-prendre, covenant, common property or exclusive use area. CIF: a parcel element is a polygon that relates to all or part of an interest.
112.	Parish	A geographical administrative boundary.
113.	Part Lot	A part lot is a multipart parcel where the multipart parcel and its parts have an area shown (*cf* #98 Lot in Parts).

#	Term	Definition
114.	Partially cancelled Title	A title that has been partially dealt with by a progressive subdivision of the land contained within the title. The title contains land in an undescribed state. The title will contain exclusions identifying the land excluded from the title.
115.	Permanent Mark	See PSM (#129).
116.	PID	Unique persistent identifier for a node (# 106).
117.	Plan Amendments	Changes made to the survey or CIF after lodgement.
118.	Plan Description	Description of the rights and interests created by the survey.
119.	Plan Number	The unique identifier of a plan controlled by the QSIIS standard for parcel identification.
120.	PLI	Property Location Index. This is a DNRM database containing street address information for lot on plan descriptions.
121.	Point	See Node (# 106).
122.	Position	Latitude and Longitude values showing the current location of the node (# 106).
123.	Previous Parcel Description	Describes existing registered parcels being dealt with by the survey.
124.	PM	Permanent mark (see PSM, #129).
125.	Primary Parcel	A cadastral parcel created to issue a primary legal interest in land, (freehold or a State Lease).
126.	Private Yard	Part of a lot on a Building Format Plan that is outside the building and unlimited in height and depth.
127.	Profit-a-prendre	A profit-a-prendre is an interest that arises by agreement between two parties and relates to the right of one party to enter upon the land of the other and to extract or remove part of the land's substance (e.g. sand, gravel, trees, etc) (source: LTPM).
128.	Project Manager	The entity responsible for gaining approvals for a survey.
129.	PSM	Permanent Survey Mark. A reference mark with a unique number and with administrative and positional information recorded in the Survey Control Data Base (SCDB).
130.	PSM Node	Type of Cadastral Node (# 30). A PSM node may or may not be connected to the geodetic datum. A PSM that is not connected to the datum is the same as a Reference Node. A PSM that is connected differs in that co–ordinates are determined independently of the cadastre.
131.	QVAS	Queensland Valuation and Sales System.
132.	Reference Mark	Type of monument placed at a reference node.
133.	Reference Node	Type of Cadastral Node. Node that is connected to a boundary node by direct observations. A Reference Node has a PID and a monument. The PID changes if the monument changes (is replaced). Co–ordinates will change with successive surveys.
134.	Register	To record the particulars of an instrument in the freehold land registry.
135.	Registered	When an instrument is recorded in the land registry.
136.	Registrar	Registrar of Titles.
137.	Remedy	Legal redress; the legal means of enforcing a right or redressing a wrong.
138.	Requisition	A formal notification that the document has defects and those defects shall be clarified or corrected before the document may be passed for registration.
139.	Re-referenced survey mark	A survey mark placed either at parcel corner or as a reference mark, may have its spatial relationship to the parcel corner altered due to the carrying out of subsequent surveys.
140.	Reservation	An exception or a reservation of a right to resume from an original grant.
141.	RTDPP	Register of Titles Directions for the Preparation of Plans.

#	Term	Definition
142.	SCDB	Survey Control Database. This is a DNRM database containing information about survey control marks (permanent marks) throughout Queensland.
143.	Secondary Interest	An interest created in a primary parcel, but subservient to the primary interest. Primary and secondary interests are indicated in the ePlan model by the topology.
144.	Secondary Parcel	A cadastral parcel created to represent a secondary interest affecting of a primary parcel, (e.g. lease, covenant, license etc).
145.	Significant digits	The meaningful digits in a number that reflect its precision.
146.	SLAM	State Land Asset Management.
147.	SMIS	Smart Map Information Service.
148.	Spheroidal	3. Geodesy: having the nature or shape of an ellipsoid (#72) 4. General: roughly spherical, approximately round, roughly ball shaped
149.	Standard Format Plan	Standard Format Plans create parcels that are of two dimensions at ground level and are unlimited in height and depth. Parcels are defined by surveyed dimensions and marks placed in the ground. RTDPP
150.	Station	A numbered cadastral node appearing on a survey or in a CIF.
151.	Station on plan	A numbered cadastral node on a plan.
152.	Statutory	Prescribed or authorised by statute.
153.	Style Sheet	Template to determine how to visualise CIF data.
154.	Subject Parcel	Parcel created by the survey.
155.	Submit	A survey is submitted to the Department for processing and examination prior to lodgement under the Land Title Act. This process enables streamlining of the plan lodgement process.
156.	Survey	The process of identifying the spatial extents of a parcel on the ground.
157.	Survey Marks Dataset	A dataset containing certain attributes of the physical marks (monuments) placed at cadastral nodes.
158.	Survey Plan	Plan of survey identifying interests in land and lodged in the land registry.
159.	Survey Points Dataset	A dataset containing certain attributes of cadastral nodes.
160.	Survey Records	Additional pieces of information used to clarify survey results.
161.	Surveyors certificate	A statement of responsibility by the surveyor for the correctness of a survey or CIF.
162.	Through Observation	A through observation is the arithmetic sum of a series of consecutive distances each with the same orientation.
163.	TIFF file	A file format used for still-image bitmaps, stored in tagged fields.
164.	Undescribed balance	See Partially cancelled Title.
165.	Validate	To check a CIF against a prescribed set of business rules.
166.	Vector data	A line or movement defined by its end points, or by the current position and one other point.
167.	Visualisation	Graphical representation of information contained in a CIF.
168.	Void	Part of a lot on a BFP that is not bounded by a floor and is not given an area.
169.	Volume	See Cubic Space.
170.	Volumetric Format Plan	Volumetric Format Plans create parcels that are fully enclosed by bounding surfaces. Parcels may be above, below, or partly above and partially below ground surface and are defined by surveyed dimensions and levels.
171.	XML	A W3C standard that defines a simple, flexible text file format derived from SGML for the exchange of data.

Appendix B   Submit Plan Process

Submit Survey

Types of plan:
IS: Identification survey, always records–only
SP: Survey plan, usually for assessment and endorsement but may not be
AP: Administrative plan, always requires assessment

Surveyor

Start Submit Survey → Generate CIF → CIF → Desktop Validate CIF → Validation report

Address validation issues → Submit survey

New CIF? — Yes / No — Address verification issues

Address requisitions → Requisitions

Natural Resources and Water

Validate CIF — **Validation Service**

Verify CIF — **Submit Service** — Pass? — No / Yes — Update CISP & CAS

Records Only? — No / Yes — Low risk? — No / Yes — Assess — Pass? — Yes — Endorse? — Yes / No — Endorse — **Assessment Process**

Only endorse plans submitted for endorsement

Update CISP, CAS, P&M, etc. → End Submit Survey

Check for fatal errors and responses to validation issues

Prior to submission, the CIF must be validated so that non–fatal exceptions can be addressed and the validation report submitted with the CIF

1

Appendix C   Action Statements and Annotations

Extract from *xml-gov-au-qld-icsm-eplan-cif-annotations-1.0.xml*. The index numbers used are for internal reference in this document only.

Where the content is in italics (e.g. for #2 New road affecting a registered easement) the annotation is free text.

Annotations that refer to a particular parcel or parcels must have a pclRef attribute (see Ref. 4, § 3.49) as indicated in the pclRef column.

#	Type	Head of Power	Description	Content	pclRef
1.	New Secondary Interest	Land Title Act 1994 Land Act 1994	A statement whether secondary interests created by the survey affect existing secondary interests (see Registrar of Titles Directions for the Preparation of Plans § 22.6.6), the Annotation@pclRef must reference the new secondary interest parcel. The title reference is taken from the parcel record for the affected parcel. The parcel class and name must be being created on this survey. If more than one lot is created then multiple statements shall be used.	[parcelClass] [parcelName]+ do not affect any of the Leases lodged or registered against [titleRef] as at [dateOfSurvey - dd/mm/yyyy]	Y
2.	New road affecting a registered easement	Land Title Act 1994 Land Act 1994	If a new road is created over an existing easement, an annotation in the CIF will provide information as to the status of the easement. Valid wording for this annotation is contained in Ref. 1 (RTDPP) § 22.6.5.	Easement [parcel:name] is [partiallyOrFully] absorbed by new road	N
4.	Remainder Lot	Land Title Act 1994 Land Act 1994	Textural information identifying a specific lot as a standard format lot. The format of the remainder lot must be the same as the format of the cancelled parcel.	Lot [parcel:name] is a [parcelFormat] format remainder lot	Y
5.	Common Property Remainder Lot	Land Title Act 1994 Land Act 1994	Textural information identifying the common property as a standard format lot. Supported parcel formats are: Standard, Volumetric, Stratum, and Restricted.	Common Property is a Standard format remainder lot	Y
6.	Staged Development of scheme land	Land Title Act 1994 Land Act 1994	In a staged community titles scheme development, if the current plan is the last plan in the development, then the action statement will identify the plan as the last in the scheme. If this action statement is present then the plan should be flagged as a manual check to ensure that the numbering scheme is consistent.	This Survey is the last stage of this development.	N
7a.	Ambulatory Boundary - Reserved	Survey & Mapping Infrastructure Act 2003	Used for a Reserved Plan of Survey. Only show the relevant subsection reference. See Cadastral Survey Requirements §4.8.1.	Reserved plan of survey under section 65(4)(a)[(i), (ii) or (iii)] of the SMI Act	N

#	Type	Head of Power	Description	Content	pclRef
7b.	Ambulatory Boundary - Exempt Tidal	Survey & Mapping Infrastructure Act 2003	Used for an Exempt Plan of Survey (Tidal). Only show the relevant subsection reference and descriptor. See Cadastral Survey Requirements §4.8.1.	Exempt land under section 66(1)[(a),(b), (c), (d) or (e)] of the SMI Act ([specified tidal boundary, indigenous land, strategic port land, forest reserve, protected area or State Forest])	N
7c.	Ambulatory Boundary - Exempt Non-tidal	Survey & Mapping Infrastructure Act 2003	Used for Exempt Plans of Survey on non-tidal watercourses. Only show relevant subsection reference. See Cadastral Survey Requirements §4.8.1.	Exempt land under section 95(1)[(a),(b), (c)] of the SMI Act ([indigenous land, forest reserve, protected area or State Forest])	N
7d.	Ambulatory Boundary - First New Plan	Survey & Mapping Infrastructure Act 2003	Used for a First New Plan of Survey. Only show relevant subsection reference. See Cadastral Survey Requirements §4.8.1.	First new plan of survey under section [80, 81, 82, 83, 108, 109 or 110] of the SMI Act]	N
7e.	Ambulatory Boundary - New Source - Tidal	Survey & Mapping Infrastructure Act 2003	Used where the plan contains New Source Material for a tidal boundary. See Cadastral Survey Requirements §4.8.1.	Tidal boundary defined using new source material under section 89 of the SMI Act	N
7f.	Ambulatory Boundary - New Source - Watercourse	Survey & Mapping Infrastructure Act 2003	Used where New Source Material for a not tidal watercourse boundary has been supplied. See Cadastral Survey Requirements §4.8.1.	Watercourse boundary defined using new source material under section 116 of the SMI Act	N
7g.	Ambulatory Boundary - Single Lot	Survey & Mapping Infrastructure Act 2003	Used for Single Lot Declaration for both tidal and non-tidal boundaries. Only show the relevant subsection reference. See Cadastral Survey Requirements §4.8.1.	First new plan of survey under section [83 or 109] of the SMI Act	N
7h.	Ambulatory Boundary - Multi Lot - Tidal	Survey & Mapping Infrastructure Act 2003	Used for a Multiple Lot Declaration of a tidal boundary. See Cadastral Survey Requirements §4.8.1.	Tidal boundary follows multiple lot declarations under section 93 of the SMI Act, on [AP Plan Number]	N
7i.	Ambulatory Boundary - Multi Lot - Watercourse	Survey & Mapping Infrastructure Act 2003	Used for a Multiple Lot Declaration of a non-tidal watercourse boundary. See Cadastral Survey Requirements §4.8.1.	Watercourse boundary follows multiple lot declarations under section 120 of the SMI Act , on [Plan Number]	N
8.	Public Use Land	Land Title Act 1994 Land Act 1994	Action statement indicating that the survey creates public use land. The survey will contain parcels with a use of parcel of "public use land". This is a new action statement and no examples on plans exist. When this statement is used at least one parcel with the use of parcel as public use land must exist.	Survey creates Public Use Land	N

#	Type	Head of Power	Description	Content	pclRef
9.	Endorsements on previous plan or previous title	Land Title Act 1994 Land Act 1994	Action statement in the CIF indicating that on the previous plan or previous title specific endorsements relating to previous conditional consents exist and have been dealt with. It must be related to a created lot. Multiple statements are required if more than one parcel on the plan is affected.	*Text*	N
10.	Compilation Certificate	Land Title Act 1994 Land Act 1994 Survey & Mapping Infrastructure Act 2003	The source of the original observations. The list of plan numbers must be the list of plans found in the elements reducedObservation@adoptedAzimuthSurvey and reducedObservation@adoptedDistanceSurvey	Original information compiled from [List of Plan Numbers] in the [Department Name]	N
11.	Field Notes or Survey Records Lodged	Land Title Act 1994 Land Act 1994 Survey & Mapping Infrastructure Act 2003	Indicates whether field notes or survey records have been lodged for this survey. If this statement is present then either the SurveyHeader@fieldNoteFlag is set or a value is present in the SurveyHeader@fieldNoteReference.	Field Notes lodged with this survey	N
16.	Multi-Plan Surveys	Land Title Act 1994 Land Act 1994	Where a series of contiguous surveys are completed an action statement may be used in each one to indicate that they are part of a series. In the statement the number "n" is the count of the number of plans in the list. The current plan must be one of the plans listed.	This is one of [plan count] plans ([List of Plan Numbers]) from the same survey	N
17a.	Building format no encroachment	Land Title Act 1994 Land Act 1994	A statement required on all building format plans to identify whether or not an encroachment exists. See Registrar of Titles Directions for the Preparation of Plans §9.20.7. If this annotation is used, no other building format encroachment annotation can be used.	I certify that as far as it is practical to determine, no part of the building shown on this plan encroaches onto adjoining lots or road.	N
17b.	Building format encroachment statement	Land Title Act 1994 Land Act 1994	A statement required on all building format plans to identify whether or not an encroachment exists. See Registrar of Titles Directions for the Preparation of Plans §9.20.7. If this annotation is used, an additional encroachment statement is required (18, 18a or 18b).	I certify that part of the building shown on this plan encroaches onto adjoining lots/road.	N
18.	Building format encroachment statement - A	Land Title Act 1994 Land Act 1994	A statement required when there is an encroachment by the subject building on a building format plan (i.e. #17b is used). Ref. 1 (RTDPP) § 9.20	All lots defined on this plan are wholly contained within the base parcel.	N

#	Type	Head of Power	Description	Content	pclRef
18.a.	Building format encroachment statement - Existing Building	Land Title Act 1994 Land Act 1994	A statement required where there is an encroachment by the subject building on a building format plan. Ref. 1 (RTDPP) § 9.20	Encroachment is part of an existing building.	N
18.b.	Building format encroachment statement - Minor encroachments BMS	Land Title Act 1994	A statement required where there is an encroachment by the subject building on a building format plan.	Minor building encroachments will be satisfied by the provisions of the BMS.	N
19.	Location of Volumetric Parcel in relation to a building	Land Title Act 1994 Land Act 1994	Required if a volumetric parcel is located on top of a building, the Annotation@pclRef must reference the volumetric parcel.	*Text*	Y
20.	References to Structural Features	Land Title Act 1994 Land Act 1994	Used where a delimited boundary generally follows a structural feature, e.g. "Parcel boundary generally follows the outer face of the western wall". This statement is only used in volumetric lots and standard format lots. The action statement cannot be validated.	*Parcel boundary generally follows the outer face of the western wall.*	N
21.	Restricted parcel - secondary interest	Land Title Act 1994 Land Act	Defines the value of the upper and lower restriction for a restricted easement. See Ref. 1 (RTDPP) § 6.5 for specific details. The statement must supply a height in the form "RL *nnn.nn <datum>"* where the datum is usually AHD. When this statement is used it must be accompanied by a (# 27) Height Origin Statement.	[parcelClass] [parcelName] is restricted in height to between RL [Height 1] and RL [Height 2]	Y
21.a.	Restricted parcel - primary interest (above depth restriction)	Land Title Act 1994 Land Act 1994	Defines the lower restriction for a restricted lot. See Registrar of Titles Directions for the Preparation of Plans §8.7. There are 3 variants to depth restrictions (above, below, between) that refer only to a depth from the surface. This action statement only refers to restricted format lots and the words restricted must appear in the plan's description.	[parcel:name] is restricted to the depth of [Depth]m from the surface as defined by [List of Plans]	Y
21.b.	Restricted Parcel - primary interest (below depth restriction)	Land Title Act 1994 Land Act 1994	As for #21.a, but below specified depth.	[parcelName] is restricted below the depth of [Depth]m from the surface as defined by [List of Plans]	Y
21.c.	Restricted parcel - primary interest (between depths restriction)	Land Title Act 1994 Land Act 1994	As for #21.a, but between specified depths.	[parcelName] is restricted between the depths of [Depth 1]m and [Depth 2]m from the surface as defined by [List of Plans]	Y

#	Type	Head of Power	Description	Content	pclRef
21.d.	Restricted parcel - Secondary Interest - Single Restriction	Land Title Act 1994 Land Act 1994	This action statement defines either the upper or lower height restriction for a restricted easement. See Registrar of Titles Directions for the Preparation of Plans §6.5. The statement must supply a height in the form "RL nnn.nn <datum>" where datum is usually AHD. When this statement is used it must be accompanied by a (# 27) Height Origin Statement.	[parcelClass] [parcelName] is restricted in height [above or below] RL [Height 1]	Y
22.	Encroachment – lodged plan	Survey and Mapping Infrastructure Regulation 2004	Where an encroachment exists, this statement is required indicating that specific conditions have been satisfied. See Cadastral Survey Requirements §3.20. The referenced parcels must be in the CIF either as the created parcel or as an adjoining parcel.	Encroachment notice issued to the owner(s) of [parcel:name] and [roadName] Road on [date - dd/mm/yyyy] in accordance with s.19 of the Survey and Mapping Infrastructure Regulation 2004.	Y
23.	Encroachment – identification survey	Survey and Mapping Infrastructure Regulation 2004	Where an encroachment exists, this statement is required indicating that specific conditions have been satisfied. See Cadastral Survey Requirements §3.20. The referenced parcels must be in the CIF either as the subject parcel or an adjoining parcel, and must be in the survey description.	Encroachment notice issued to the owner(s) of [parcelName] and [roadName] Road on [date - dd/mm/yyyy].	Y
24.	Date of Development Approval Exemption	Land Title Act 1994 Land Act 1994	Required where a survey creating a scheme is an exempt development. Where a development approval is required, the date must be included in the plan (i.e. the CIF must either have a development approval date or this annotation).	No development approval necessary	N
24.a.	Date of Development Approval	Land Title Act 1994 Land Act 1994	Required where a scheme being created by a survey is an exempt development. Where a development approval is required the date must be included in the plan (i.e. the CIF must either have a development approval date or this annotation).	Development approval: [approvalDate - dd/mm/yyyy]	N
25.	Marking of volumetric parcels	Land Title Act 1994 Land Act 1994	This annotation is required where the vertices of the volumetric lot have not been marked. It must only be used on Volumetric Plans.	Vertices of volumetric lot have not been marked, vertices are either above the ground, below the ground or within structures	N
26.	Bounds of volumetric parcels	Land Title Act 1994 Land Act 1994	Required where a volumetric parcel is bound by vertical planes, the Annotation@pclRef must reference the lot parcel. Ref. 1 (RTDPP) § 10.10.5	[parcelClass] [parcelName] is bounded by vertical planes.	Y

#	Type	Head of Power	Description	Content	pclRef
27a.	Height Origin information for Volumetric and Restricted Plans –A	Land Title Act 1994 Land Act 1994	Statement must contain the vertical origin PM and its reduced level on AHD. There are two possible statements. The PM number and height value should appear in a RedVerticalObs record for the mark and should be validated against the SCDB.	All levels are referred to Australian Height Datum as determined by PM [number] RL [Height]	N
27b.	Height Origin information for Volumetric and Restricted Plans - B	Land Title Act 1994 Land Act 1994	Statement must contain the vertical origin PM and its reduced level on AHD. There are two possible statements. The PM Number and Height Value should appear in a RedVerticalObs record for the mark and should be validated against the SCDB.	Datum for levels: PM [number] RL [Height]	N
28.	Balance Area	Land Title Act 1994 Land Act 1994	Required where a lot created by the survey is a balance area, the Annotation@pclRef must reference the balance lot.	Lot [parcelName] is a Balance Area	Y
29.	Numbering template	Land Title Act 1994 Land Act 1994	A description of the numbering template used for a Community Titles Scheme.	*Text*	N
30.	Surrendered interest	Land Title Act 1994 Land Act 1994	Required to explain why an interest to be surrendered when the plan is lodged hasn't been allocated when otherwise is should have been.	[dealingNumber] [parcelClass] [parcelName] is to be surrendered prior to registration of this plan.	N
31.	Area of base parcel	Land Title Act 1994 Land Act 1994	Where land is subdivided by a building format plan, the area of the base parcel must be shown; the Annotation@pclRef must reference the base parcel. Ref. 1, § 9.7	Base parcel area: [area] m2.	Y
33.	Area of new road	Land Title Act 1994 Land Act 1994	For every area of new road this statement must be made. The statement must be associated with a road parcel.	Area of new road [list of stations] [area] m2.	Y
33a.	Area of closed Road	Land Title Act 1994 Land Act 1994	For each area of closed road this statement must appear and be associated with an administrative parcel for closure and checking purposes.	Area of closed road [list of stations] [area] m2.	Y
33b.	Total Area of New Road	Land Title Act 1994 Land Act 1994	This is the sum of all the new road statements on the survey	Total Area of New Road [area] m2.	N

#	Type	Head of Power	Description	Content	pclRef
33c.	Total Area of Closed Road	Land Title Act 1994 Land Act 1994	This is the sum of all of the areas of closed road in the survey	Total Area of Closed road [area] m2.	N
34.	Diagram	Surveying and Mapping Infrastructure Act 2003	This annotation is used to display a diagram on the visualisation of a survey. The annotation:desc contains a list of station numbers which must be contained in the diagram. The list of station numbers to be displayed in the diagram can be a list of station numbers (1,2,3) or a list (1-3) or a combination	[list of station numbers]	N
35.	About Area	Land Title Act 1994 Land Act 1994	Required where a lot created by the survey is an about area; the Annotation@pclRef must reference the lot.	Lot [parcelName] is an About Area	Y
36.	Undescribed Balance	Land Title Act 1994 Land Act 1994	Required where an undescribed balance is being created by the survey. It should be noted that undescribed balances can only be created with written permission of the Registrar of Titles. See Section 4.17 of the Registrar's Directions. The Annotation@pclRef must reference the lot.	Lot [balLot] Balance is Lot [baseParcel] less new Lots and Road created on the following plans [listPlans]	Y
37.	Fences as Boundaries	Land Title Act 1994 Land Act 1994	Required where the fence is adopted as the boundary for large unsurveyed parcels see Section 3.11.4 of the Cadastral Survey Standards.	Fences to be adopted as boundaries on lines [List of Lines by Station Numbers]	N
38.	Lines not Surveyed	Land Title Act 1994 Land Act 1994	Where lines have not been fully surveyed and for some future dealings these lines may need to be surveyed	Lines [List of Lines by station numbers] have not been fully surveyed and future dealings may require these boundaries to be fully surveyed.	N
39.	Additional Reference Marks	Land Title Act 1994 Land Act 1994	Where Surveyors are dealing with subdivisions where additional earth works may disturb the reference marks a subsequent identification plan may be lodged so further marks can be connected.	Additional reference marks to be placed following road construction (see [IS Plan Number]).	N
40.	Building Unit Number Format	Land Title Act 1994	The numbers allocated to building format lots in a scheme must be consistent across the scheme they may include FL, TFL, TL, BL or BFL. See Section 9.4 of the Registrars Direction for details.	The Format for Lot Numbers in the Scheme is [Form Type].	N

#	Type	Head of Power	Description	Content	pclRef
41.	Easement Extinguished - Sec 87 of LTA	Land Title Act 1994	Where the same existing encumbrance and benefit easements exist in the extinguished lots. The created lots must deal with this issue; you cannot have the same easement as both an encumbrance and benefit in the same lot. This is dealt with under S.87 of the Land Title Act.	[DealingNumber] [EasementIdentifier] [partially/fully] extinguished in Lot [lotNumber] in Terms of Sec. 87 of the Land Title Act.	Y
42.	Interest Absorbed by New Road	Land Title Act 1994	Action statement used where a secondary interest in the extinguished lot is being partially or fully absorbed by new road.	[DealingNumber] [InterestIdentifier] on Plan [planNo] [partially/fully] absorbed by New Road.	Y
43.	Notice Satisfied by Plan	Land Title Act 1994	An action statement used when either a Notice of Intention to Resume or Notice of Realignment is fully or partial satisfied by the survey.	[NIR/NRA] [DealingNumber] [partially/fully] satisfied.	N
44.	All Leases Allocated	Land Title Act 1994	Action statement used where a significant number of interests in the extinguished lot are all allocated to a single new lot.	All leases which were in the former [LotOnPlan], are now fully contained with Lot [LotNo] on this plan. Date [DateOfCertificate ../../....]	Y
45.	Area Revoked from Acquisition	Land Title Act 1994 Land Act 1994	This statement is used when a previously acquired parcel or part thereof is being amalgamated back into the original lot. Each statement must be attached to an administrative parcel.	Area revoked and added to [Existing Parcel] [list of stations] [area] m2.	Y
45a.	Total Area Revoked from Acquisition	Land Title Act 1994 Land Act 1994	This statement is used when a previously acquired parcel or part thereof is being amalgamated back into the original lot. This statement defines the total revocation for that parcel. Only required if more than one revoked area exists.	Total Area revoked and added to [Existing Parcel] [area] m2.	N
46.	Cadastral Connection	Survey and Mapping Infrastructure Act 2003	This action statement is reserved for publishing cadastral connection information in a Survey Control Object		N
47.	Relative Information	Survey and Mapping Infrastructure Act 2003	This action statement is reserved for publishing relative information in the Survey Control Object		N

#	Type	Head of Power	Description	Content	pclRef
48.	Area Exclusion	Land Title Act 1994 Land Act 1994	Required where a lot created by the survey has one or more exclusions, the Annotation@pclRef must reference the created lot.	Lot [parcelName] has a [exclusionType] of [Area]	Y

Appendix D   Parcel Format, Class, Topology, Identifier and Use

This table has been adapted from Ref. 2, § 3.17, Tables 2, 3 and 4 that describe actions under various acts.

#	Parcel Format (Mandatory)	Parcel Class (Mandatory)	Parcel Topology	Parcel Identifier	Use of parcel (may be mandatory, see VR024 (§ 3.1.6.3.1)
1.	Standard	Lot	Primary	Numeric	
2.		Lot	Primary	Numeric	Remainder
3.		Lot	Primary	Numeric	Public Use Land
4.		Lot	Primary	Numeric	Public Use Land (Reserve)
5.		Lot	Primary	Numeric	Public Use Land (Park)
6.		Lot	Primary	Numeric	Public Use Land (Parks and gardens)
7.		Lot	Primary	Numeric	Public Use Land (Open Space and Buffer Zones)
8.		Lot	Primary	Numeric	Public Use Land (Aboriginal Purposes)
9.		Lot	Primary	Numeric	Public Use Land (Beach Protection and Coastal Management)
10.		Lot	Primary	Numeric	Public Use Land (Drainage)
11.		Lot	Primary	Numeric	Public Use Land (Public Halls)
12.		Lot	Primary	Numeric	Public Use Land (Scenic Purposes)
13.		Lot	Primary	Numeric	Public Use Land (Scientific Purposes)
14.		Lot	Primary	Numeric	Public Use Land (Showgrounds)
15.		Lot	Primary	Numeric	Public Use Land (Sport and Recreation)
16.		Lot	Primary	Numeric	Public Use Land (Strategic land management)
17.		Lot	Primary	Numeric	Public Use Land (Environmental Purposes)
18.		Lot	Primary	Numeric	Public Use Land (Public boat ramps, jetties and landing places)
19.		Lot	Primary	Numeric	Public Use Land (Navigational Purposes)
20.		Lot	Primary	Numeric	Public Use Land (Natural Resource Management)
21.		Lot	Primary	Numeric	Public Use Land (Heritage, historical and cultural purposes)
22.		Lot	Primary	Numeric	Public Use Land (Torres Strait Islander Purposes)
23.		Lot	Primary	Numeric	Public Use Land (Public Toilet Facilities)
24.		Lot	Primary	Numeric	Public Use Land (Cemeteries, crematoriums and mortuaries)

#	Parcel Format (Mandatory)	Parcel Class (Mandatory)	Parcel Topology	Parcel Identifier	Use of parcel (may be mandatory, see VR024 (§ 3.1.6.3.1)
25.		Lot	Primary	Numeric	Public Use Land (Travelling stock requirements)
26.		Lot	Primary	Numeric	Public Use Land (Watering-places)
27.		Lot	Primary	Numeric	Public Use Land (Roads)
28.		Lot	Primary	Numeric	(Canal)
29.		Lot	Primary	Numeric	(Access Channel)
30.		Lot	Primary	Numeric	(Artificial Waterway)
31.		Road	Primary	R + Number	
32.		Unallocated State Land	Primary	U + Number	
33.		Common Property	Primary	CP or CP CTS <number>	
34.		Road License	Primary	Numeric	Road License
35.		Administrative Area	Primary	String	Local Government
36.		Administrative Area	Primary	String	Coastal Management Zone
37.		Administrative Area	Primary	String	Erosion Prone Area (BP Act)
38.		Administrative Area	Primary	String	Parish
39.		Administrative Area	Primary	String	County
40.		Administrative Area	Primary	String	Locality
41.		Building	Primary	String	Building Footprint
42.		Footprint	Primary	Numeric	Volumetric Lot Footprint
43.		Hydrography	Primary	W + Number	River
44.		Hydrography	Primary	W + Number	Creek
45.		Hydrography	Primary	W + Number	Bay
46.		Hydrography	Primary	W + Number	Ocean
47.		Easement	Secondary	Alpha	
48.		Lease	Secondary	Alpha	
49.		Covenant	Secondary	Alpha	
50.		Profit a Prendre	Secondary	Alpha	
51.		Permit	Secondary	Alpha	

#	Parcel Format (Mandatory)	Parcel Class (Mandatory)	Parcel Topology	Parcel Identifier	Use of parcel (may be mandatory, see VR024 (§ 3.1.6.3.1)
52.	Restricted	Lot	Primary	Numeric	
53.		Lot	Primary	Numeric	Remainder
54.		Lot	Primary	Numeric	Public Use Land
55.		Road	Primary		
56.		Common Property	Primary		
57.		Easement	Secondary	Alpha	
58.	Volumetric	Lot	Primary	Numeric	
59.		Lot	Primary	Numeric	Remainder
60.		Lot	Primary	Numeric	Public Use Land
61.		Road	Primary		
62.		Common Property	Primary	Alpha:Numeric	
63.		Easement	Secondary	Alpha	
64.		Lease	Secondary	Alpha	
65.		Covenant	Secondary	Alpha	
66.		Profit a Prendre	Secondary	Alpha	
67.		Permit	Secondary	Alpha	
68.	Building	Lot	Primary	Numeric	[2]
69.		Lot	Primary	Numeric	Main
70.		Lot	Primary	Numeric	Balcony
71.		Lot	Primary	Numeric	Veranda
72.		Lot	Primary	Numeric	Porch
73.		Lot	Primary	Numeric	Patio
74.		Lot	Primary	Numeric	Garage
75.		Lot	Primary	Numeric	Deck
76.		Lot	Primary	Numeric	Storage
77.		Lot	Primary	Numeric	Courtyard

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[2]   Multipart building lots have no use of parcel

#	Parcel Format (Mandatory)	Parcel Class (Mandatory)	Parcel Topology	Parcel Identifier	Use of parcel (may be mandatory, see VR024 (§ 3.1.6.3.1)
78.		Lot	Primary	Numeric	Carport
79.		Lot	Primary	Numeric	Roofgarden
80.		Lot	Primary	Numeric	Private Yard
81.		Lot	Primary	Numeric	Void
82.		Common Property	Primary	Alpha:Numeric	

Legend

Primary
> A primary parcel represents an interest that that cannot intersect any other primary parcel of the same class. Some groups of primary parcels form contiguous layers over the entire state, e.g. each administrative area class and the amalgamation of standard format parcels with class lot, road, common property and hydrography.

Secondary
> A secondary parcel represents an interest associated with one or more primary parcels and may intersect other secondary interests, e.g. an easement is over a primary parcel and may intersect other secondary interests such as easements, leases and mortgages.

Appendix E Purpose of Survey

Purpose of Survey

- Subdivision
- Amalgamation
- Resurvey
- Permit
- Easement
- Covenant
- Profit a Prendre
- Identification.

Note: all surveys (CIFs) must have at least one purpose. For surveys (CIFs) with more than one purpose of survey, the following rules matrix defines the valid combinations of purpose of survey.

Purpose of Survey value	Type of Purpose	Rule
Subdivision Amalgamation	Primary Type 1	If a survey has a Primary Type 1 Purpose: • It must not have another Primary Type 1 Purpose. • At least one parcel of class "Lot", "Road" or "Common Property" must be created.
Resurvey	Primary Type 2	If a survey has a Primary Type 2 purpose then • At least one parcel of class "Lot", "Road" or "Common Property" must be created. • It must not have another primary purpose
Permit	Primary Type 3	If a survey has a Primary Type 3 purpose: • It must not have any other purpose • A parcel with a class the same as the purpose must also appear in the plan.
Easement Covenant Lease Profit a Prendre	Secondary Type 1	If a survey has a Secondary Type 1 purpose: • It may have multiple secondary type 1 purposes • A parcel with a class the same as the purpose and a state of created must also appear in the CIF.
Identification	Secondary Type 2	If a survey has a Secondary Type 2 purpose: • It must not have any other purpose. • The survey must not create or extinguish any parcels. • The surveyStatus must be "Survey Records Only".

Appendix F   Examples of Head of Power

The following are examples of valid values for Head of Power (see § 3.1.3):

- Land Title Act 1994
- Land Act 1994
- Acquisition of Land Act 1967
- Mineral Resources Act 1989
- Aboriginal Land Act 1991
- Torres Strait Islander Land Act 1991
- Native Title (Queensland) Act 1992
- Survey and Mapping Infrastructure Act 2003
- Not defined

Appendix G   Index to rules

Ordered by Document Section

Ordered by Rule Number

#	Rule #	Name	Definition Reference	Section	Page
83.	VR199	ATS Title Reference(s)	3.2.5.1.1	3.2.4.1.1	71
84.	VR200	Allocation of previous title endorsements	3.2.5.2.1	3.2.4.2.1	71
85.	VR202	New secondary parcel identifier	3.2.5.4.1	3.2.4.3.1	72
86.	VR207	Registered secondary interests	3.2.6.1.1	3.2.5.1.1	73
87.	VR210	Original information statement	3.2.7.1.1	3.2.6.1.1	74
88.	VR219	Registration status of surveyor	3.2.9.2.1	3.2.7.1.1	74
89.	VR221	Lodging entity	3.3.1.1.1	3.3.1.1.1	77
90.	VR222	Link to SCDB	3.2.10.1.1	3.2.8.1.1	75
91.	VR223	PM sketch exists in SCDB	3.2.10.1.2	3.2.8.1.2	75
92.	VR225	Permanent Mark	3.2.10.2.1	3.2.8.2.1	76
93.	VR226	Previous CIF Meridian	3.2.11.1.1	3.2.9.1.1	76
94.	VR227	Meridian Origin	3.1.14.5.1	3.1.14.5.1	40
95.	VR234	Reference data version (specified by plan)	3.1.27.1.1	3.1.25.1.1	65
96.	VR237	Validate control marks	3.2.4.3.4	3.2.3.3.1	70
97.	VR241	Compiled statement plan numbers	3.2.1.1.4	3.2.1.1.2	66
98.	VR247	Spatial element of local government	3.1.15.3.1	3.1.15.3.1	44
99.	VR248	Local government allocated area	3.1.15.3.3	3.1.15.3.3	45
100.	VR250	Action statement Compilation Certificate	3.1.14.4.3	3.1.14.4.3	39
101.	VR251	Personnel role and registration type	3.1.13.1.2	3.1.13.1.2	26
102.	VR252	Correct personnel	3.1.13.1.3	3.1.13.1.3	27
103.	VR253	Created Parcels Allocation	3.1.5.1.6	3.1.5.1.5	17
104.	VR256	Submission date	3.3.1.1.2	3.3.1.1.2	77

Appendix H VR000 – Protocol Check

ePlan Element	Attribute Validation	Reason (error message given)
LandXML	There is no 'date' attribute.	Attribute 'date' must appear on element 'LandXML' on Line X, Column X.
	The 'date' attribute is empty.	'' is not a valid value for 'date' on Line X, Column X.
	There is no 'time' attribute.	Attribute 'time' must appear on element 'LandXML' on Line X, Column X.
	There is an empty 'time' attribute.	'' is not a valid value for 'time' on Line X, Column X.
	There is no 'version' attribute.	Attribute 'version' must appear on element 'LandXML' on Line X, Column X.
	There is an empty 'version' attribute.	CIF contains an empty attribute 'version' on Line X, Column X.
LandXML/Units	There is no 'Units' element.	Invalid content was found starting with element 'Parcels'. One of '{Units}' is expected. [Line X, Column X]
LandXML/CoordinateSystem	There is no 'CoordinateSystem' element.	Invalid content was found starting with element 'Monuments'. One of '{CoordinateSystem}' is expected. [Line X, Column X]
	There are multiple 'CoordinateSystem' elements.	Invalid content was found starting with element 'CoordinateSystem'. One of '{Monuments, Project, Alignments, Amendment, GradeModel, PlanFeatures, PipeNetworks, Roadways, Surfaces, WC[##other]' is expected. [Line X, Column X]
	There is no 'datum' attribute.	Attribute 'datum' must appear on element 'CoordinateSystem' on Line X, Column X.
	There is an empty 'datum' attribute.	CIF contains an empty attribute 'version' on Line X, Column X.
	There is no 'desc' attribute.	Attribute 'desc' must appear on element 'CoordinateSystem' on Line X, Column X.
	There is an empty 'desc' attribute.	CIF contains an empty attribute. [Line X, Column X]
LandXML/Application	There is no 'Application' element.	Invalid content was found starting with element 'FeatureDictionary'. One of '{Application}' is expected. [Line X, Column X]
	There are multiple 'Application' elements.	Invalid content was found starting with element 'Application'. One of '{FeatureDictionary}' is expected. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'Application' on Line X, Column X.
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'version' attribute.	Attribute 'version' must appear on element 'Application' on Line X, Column X.
	There is an empty 'version' attribute.	CIF contains an empty attribute. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
LandXML/Application/Author	There is no 'createdBy' attribute.	Attribute 'createdBy' must appear on element 'Author' on Line X, Column X.
	There is an empty 'createdBy' attribute.	CIF contains an empty attribute. [Line X, Column X]
LandXML/FeatureDictionary	There is no 'FeatureDictionary' element.	Invalid content was found starting with element 'CoordinateSystem'. One of '{FeatureDictionary}' is expected. [Line X, Column X]
	There are multiple 'FeatureDictionary' elements.	Invalid content was found starting with element 'FeatureDictionary'. One of '{CoordinateSystem}' is expected. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'FeatureDictionary' on Line X, Column X.
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'version' attribute.	Attribute 'version' must appear on element 'FeatureDictionary'. [Line X, Column X]
	There is an empty 'version' attribute.	CIF contains an empty attribute. [Line X, Column X]
LandXML/Amendment	There is no 'amendmentDate' attribute.	Attribute 'amendmentDate' must appear on element 'Amendment'. [Line X, Column X]
	There is an empty 'amendmentDate' attribute.	'' is not a valid value for 'date'. [Line X, Column C]
	There is no 'comments' attribute.	Attribute 'comments' must appear on element 'Amendment'. [Line X, Column X]
	There is an empty 'comments' attribute.	CIF contains an empty attribute. [Line X, Column X]
LandXML/Amendment/AmendmentItem	There is no 'AmendmentItem' element.	The content of element 'Amendment' is not complete. One of '{AmendmentItem}' is expected. [Line X, Column X]
	There is no 'elementName' attribute.	Attribute 'elementName' must appear on element 'AmendmentItem'. [Line X, Column X]
	There is an empty 'elementName' attribute.	CIF contains an empty attribute. [Line X, Column X]
	Neither an 'oldName' or 'newName' attribute is provided.	An AmendmentItem must have either the oldName or newName (or both) attributes.
LandXML/CgPoints	There is no 'CgPoints' element.	Invalid content was found starting with element 'Survey'. One of '{Parcels, CgPoints}' is expected. [Line X, Column X]
LandXML/CgPoints/CgPoint	Non unique 'name' attribute provided.	Each CgPoint must have a unique name. Multiple points found with the name 'K'.
	The 'state' attribute is not a valid enumeration value.	Value 'InvalidState' is not facet-valid with respect to enumeration '[abandoned, destroyed, existing, proposed]'. It must be a value from the enumeration. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	There is no 'pntSurv' attribute.	Attribute 'pntSurv' must appear on element 'CgPoint'. [Line X, Column X]
	There is an empty 'pntSurv' attribute.	Value '' is not facet-valid with respect to enumeration '[monument, control, sideshot, boundary, natural boundary, traverse, reference, administrative]'. It must be a value from the enumeration. [Line X, Column X]
	The 'pntSurv' attribute is not a valid enumeration value.	Value 'InvalidValue' is not facet-valid with respect to enumeration '[monument, control, sideshot, boundary, natural boundary, traverse, reference, administrative]'. It must be a value from the enumeration. [Line X, Column X]
	There is an empty 'oID' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The attribute 'State' is "existing" and there is no 'oID' attribute.	A CgPoint with name 'K' has a state of 'existing' but does not have the oID attribute.
	There is no 'zoneNumber' attribute and the attribute Survey/SurveyHeader/CoordinateSystem @horizDatum="MGA".	A CgPoint with name 'K' must have a zoneNumber attribute when the CoordinateSystem is MGA.
	The 'zoneNumber' attribute is not a valid enumeration value.	Value '200' is not facet-valid with respect to maxInclusive '99' for type 'zoneNumberType'. [Line X, Column X]
	There is no coordinate values for 'CgPoint' attribute.	A CgPoint with name 'K' must provide content consisting of either x y or x y z coordinate values.
	There is an invalid format of the coordinate values for 'CgPoint'.	A CgPoint with name 'K' must provide content consisting of either x y or x y z coordinate values.
LandXML/Survey	There is no 'Survey' element.	Invalid content was found starting with element 'Application'. One of '{CgPoints, Survey}' is expected. [Line X, Column X]
	There are multiple 'Survey' elements.	Invalid content was found starting with element 'Survey'. One of '{Application}' is expected. [Line X, Column X]
LandXML/Survey/SurveyHeader	There is no 'SurveyHeader' element.	Invalid content was found starting with element 'InstrumentSetup'. One of '{SurveyHeader}' is expected. [Line X, Column X]
	There are multiple 'SurveyHeader' elements.	Invalid content was found starting with element 'SurveyHeader'. One of '{Equipment, SurveyMonument, CgPoints, InstrumentSetup, LaserSetup, GPSSetup, TargetSetup, GPSVector, GPSPosition, ObservationGroup, ControlChecks, FieldNote, Feature}' is expected. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'SurveyHeader'. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'jurisdiction' attribute.	Attribute 'jurisdiction' must appear on element 'SurveyHeader'. [Line X, Column X]
	There is an empty 'jurisdiction' attribute.	Value '' is not facet-valid with respect to enumeration '[Australian Capital Territory, New South Wales, New Zealand, Northern Territory, Queensland, South Australia, Tasmania, Victoria, Western Australia]'. It must be a value from the enumeration. [Line X, Column X]
	The 'jurisdiction' attribute is not a valid enumeration value.	Value 'France' is not facet-valid with respect to enumeration '[Australian Capital Territory, New South Wales, New Zealand, Northern Territory, Queensland, South Australia, Tasmania, Victoria, Western Australia]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'desc' attribute.	Attribute 'desc' must appear on element 'SurveyHeader'. [Line X, Column X]
	There is an empty 'desc' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'surveyFormat' attribute.	Attribute 'surveyFormat' must appear on element 'SurveyHeader'. [Line X, Column X]
	There is an empty 'surveyFormat' attribute.	Value '' is not facet-valid with respect to enumeration '[Administrative, Building Format, Expanitory Plan, Identification, Standard, Volumetric]'. It must be a value from the enumeration. [Line X, Column X]
	The 'surveyFormat' attribute is not a valid enumeration value.	Value 'InvalidFormat' is not facet-valid with respect to enumeration '[Administrative, Building Format, Expanitory Plan, Identification, Standard, Volumetric]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'type' attribute.	Attribute 'type' must appear on element 'SurveyHeader'. [Line X, Column X]
	There is an empty 'type' attribute.	Value '' is not facet-valid with respect to enumeration '[compiled, computed, surveyed]'. It must be a value from the enumeration. [Line X, Column X]
	The 'type' attribute is not a valid enumeration value.	Value 'InvalidType' is not facet-valid with respect to enumeration '[compiled, computed, surveyed]'. It must be a value from the enumeration. [Line X, Column X]
	The attribute 'surveyFormat' = 'Building Format' and there is no 'communityTitleSchemeName' attribute provided.	A SurveyHeader must have a communityTitleSchemeName if the surveyFormat is 'Building Format.
	There is no 'submissionDate' attribute.	Attribute 'submissionDate' must appear on element 'SurveyHeader'. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	There is an empty 'submissionDate' attribute.	" is not a valid value for 'date'. [Line X, Column X]
	The 'surveyStatus' attribute is not a valid enumeration value.	Value 'InvalidStatus' is not facet-valid with respect to enumeration '[Suitable for Lodgement, Survey Records Only]'. It must be a value from the enumeration. [Line X, Column X]
	There is an empty 'fieldReport' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The 'documentStatus' attribute is not a valid enumeration value.	Value 'InvalidStatus' is not facet-valid with respect to enumeration '[Captured, Historical, Framework, Submitted]'. It must be a value from the enumeration. [Line X, Column X]
LandXML/Survey/SurveyHeader/HeadOfPower	There is no 'HeadOfPower' element.	Invalid content was found starting with element 'PurposeOfSurvey'. One of '{HeadOfPower}' is expected. [Line X, Column X]
LandXML/Survey/SurveyHeader/HeadOfPower	There is no 'name' attribute.	Attribute 'name' must appear on element 'HeadOfPower'. [Line X, Column X]
LandXML/Survey/SurveyHeader/HeadOfPower	There is an empty 'name' attribute.	Value " is not facet-valid with respect to enumeration '[Aboriginal Land Act 1991, Acquisition of Land Act 1967, Land Act 1994, Land Title Act 1994, Mineral Resources Act 1989, Native Title (Queensland) Act 1992, Not defined, Survey and Mapping Infrastructure Act 2003, Torres Strait Islander Land Act 1991]'. It must be a value from the enumeration. [Line X, Column X]
LandXML/Survey/SurveyHeader/HeadOfPower	The 'name' attribute is not a valid enumeration value.	Value 'Ash's Act 2010' is not facet-valid with respect to enumeration '[Aboriginal Land Act 1991, Acquisition of Land Act 1967, Land Act 1994, Land Title Act 1994, Mineral Resources Act 1989, Native Title (Queensland) Act 1992, Not defined, Survey and Mapping Infrastructure Act 2003, Torres Strait Islander Land Act 1991]'. It must be a value from the enumeration. [Line X, Column X]
LandXML/Survey/SurveyHeader/PurposeOfSurvey	There is no 'PurposeOfSurvey' element.	Invalid content was found starting with element 'CoordinateSystem'. One of '{HeadOfPower, PurposeOfSurvey}' is expected. [Line X, Column X]
	No 'name' attribute.	Attribute 'name' must appear on element 'PurposeOfSurvey'. [Line X, Column X]
	An empty 'name' attribute.	Value " is not facet-valid with respect to enumeration '[Amalgamation, Covenant, Easement, Identification, Lease, Permit, Profit a prendre, Resurvey, Subdivision]'. It must be a value from the enumeration. [Line X, Column X]
	The 'name' attribute is not a valid enumeration value.	Value 'InvalidPurpose' is not facet-valid with respect to enumeration '[Amalgamation, Covenant, Easement, Identification, Lease, Permit, Profit a prendre, Resurvey, Subdivision]'. It must be a value from the enumeration. [Line X, Column X]
LandXML/Survey/SurveyHeader/AdministrativeDate	There is no 'adminDate' attribute.	Attribute 'adminDate' must appear on element 'AdministrativeDate'. [Line X, Column X]
	There is an empty 'adminDate' attribute.	" is not a valid value for 'date'. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	There is no 'adminDateType' attribute.	Attribute 'adminDateType' must appear on element 'AdministrativeDate'. [Line X, Column X]"
	There is an empty 'adminDateType' attribute.	Value '' is not facet-valid with respect to enumeration '[Development Approval Date, Plan Image Date, Plan Registration Date, Submission Date]'. It must be a value from the enumeration. [Line X, Column X]
	The 'adminDateType' attribute is not a valid enumeration value.	Value 'Invalid Type' is not facet-valid with respect to enumeration '[Development Approval Date, Plan Image Date, Plan Registration Date, Submission Date]'. It must be a value from the enumeration. [Line X, Column X]
LandXML/Survey/SurveyHeader/AdministrativeArea	There is no 'AdministrativeArea' element.	The content of element 'SurveyHeader' is not complete. One of '{AdministrativeArea}' is expected. [Line X, Column X]
	There is no 'adminAreaType' attribute.	Attribute 'adminAreaType' must appear on element 'AdministrativeArea'. [Line X, Column X]
	There is an empty 'adminAreaType' attribute.	Value '' is not facet-valid with respect to enumeration '[Local Government Area, Locality, County, Parish, Mining District]'. It must be a value from the enumeration. [Line X, Column X]
	The 'adminAreaType' attribute is not a valid enumeration value.	Value 'InvalidArea' is not facet-valid with respect to enumeration '[Local Government Area, Locality, County, Parish, Mining District]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'adminAreaName' attribute.	Attribute 'adminAreaName' must appear on element 'AdministrativeArea'. [Line X, Column X]
	There is an empty 'adminAreaName' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'adminAreaCode' attribute.	Attribute 'adminAreaCode' must appear on element 'AdministrativeArea'. [Line X, Column X]
	There is an empty 'adminAreaCode' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The 'pclRef' attribute does not match any Parcel@name attribute.	Administrative Area with pclRef attribute 'Lot/Plan' does not refer to any Parcel names.
LandXML/Survey/SurveyHeader/Annotation	There is no 'type' attribute.	Attribute 'type' must appear on element 'Annotation' [Line X, Column X]
	There is an empty 'type' attribute.	Value '' is not facet-valid with respect to enumeration '[Ambulatory Boundary, Area Of Footprint, Area Of New Road, Area of Base Parcel, Area to be Excised, Area to be Included, Building Format Encroachment Statement, Compilation Statement, Date Of Development Approval, Ground Level in Volumetrics, Meridian Statement, Reduced Level Datum, Road To Be Closed, Road To Be Opened, Public Use Land - New Road]'. It must be a value from the enumeration. [Line X, Column

ePlan Element	Attribute Validation	Reason (error message given)
		X]
	The 'type' attribute is not a valid enumeration value.	Value 'InvalidType' is not facet-valid with respect to enumeration '[Ambulatory Boundary, Area Of Footprint, Area Of New Road, Area of Base Parcel, Area to be Excised, Area to be Included, Building Format Encroachment Statement, Compilation Statement, Date Of Development Approval, Ground Level in Volumetrics, Meridian Statement, Reduced Level Datum, Road To Be Closed, Road To Be Opened, Public Use Land - New Road]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'Annotation'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'desc' attribute.	Attribute 'desc' must appear on element 'Annotation'. [Line X, Column X]
	There is an empty 'desc' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The 'pclRef' attribute does not match any 'Parcel@name' attribute.	Annotation with pclRef attribute 'Lot/Plan' does not refer to any Parcel names.
	The action statement 'type' and 'desc' combination is invalid.	Action Statement of type 'Public Use Land - New Road' with description 'Area of Hello New Road 9m2' is invalid: expecting "New", found 'Hello'
LandXML/Survey/SurveyHeader/CoordinateSystem	There is no 'CoordinateSystem' element.	Invalid content was found starting with element 'Personnel'. One of '{PurposeOfSurvey, CoordinateSystem}' is expected. [Line X, Column X]
	There are multiple 'CoordinateSystem' elements.	Invalid content was found starting with element 'CoordinateSystem'. One of '{Personnel}' is expected. [Line X, Column X]
	There is no 'horizontalDatum' attribute.	Attribute 'horizontalDatum' must appear on element 'CoordinateSystem'. [Line X, Column X]
	There is an empty 'horizontalDatum' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'verticalDatum' attribute.	Attribute 'verticalDatum' must appear on element 'CoordinateSystem'. [Line X, Column X]
	There is an empty 'verticalDatum' attribute.	CIF contains an empty attribute. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
LandXML/Survey/SurveyHeader/Personnel	There is no 'Personnel' element.	Invalid content was found starting with element 'SurveyorCertificate'. One of '{Personnel}' is expected. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'Personnel'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'role' attribute.	Attribute 'role' must appear on element 'Personnel'. [Line X, Column X]
	There is an empty 'role' attribute.	Value '' is not facet-valid with respect to enumeration '[Signatory, Surveyed By, Supervised By]'. It must be a value from the enumeration. [Line X, Column X]
	The 'role' attribute is not a valid enumeration value.	Value 'InvalidRole' is not facet-valid with respect to enumeration '[Signatory, Surveyed By, Supervised By]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'regType' attribute.	Attribute 'regType' must appear on element 'Personnel'. [Line X, Column X]
	There is an empty 'regType' attribute.	'' is not facet-valid with respect to enumeration '[Associate, Graduate, Licensed, Registered]'. It must be a value from the enumeration. [Line X, Column X]
	The 'regType' attribute is not a valid enumeration value.	Value 'InvalidType' is not facet-valid with respect to enumeration '[Associate, Graduate, Licensed, Registered]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'regNumber' attribute.	Attribute 'regNumber' must appear on element 'Personnel'. [Line X, Column X]
	There is an empty 'regNumber' attribute.	CIF contains an empty attribute. [Line X, Column X]
LandXML/Survey/SurveyHeader/SurveyorCertificate	There is no 'SurveyorCertificate' element.	Invalid content was found starting with element 'AdministrativeArea'. One of '{Personnel, SurveyorCertificate}' is expected. [Line X, Column X]
	There are multiple 'SurveyorCertificate' elements.	Invalid content was found starting with element 'SurveyorCertificate'. One of '{AdministrativeArea}' is expected. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'SurveyorCertificate'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'certificateType' attribute.	Attribute 'certificateType' must appear on element 'SurveyorCertificate'. [Line X, Column X]
	There is an empty 'certificateType' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'textCertificate'	Attribute 'textCertificate' must appear on element

8

ePlan Element	Attribute Validation	Reason (error message given)
	attribute.	'SurveyorCertificate'. [Line X, Column X]
	There is an empty 'textCertificate' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The certificate 'type' is Form 13 and there is no 'surveyDate' attribute.	A SurveyorCertificate must have a surveyDate if the certificateType is 'Form13V2'.
	There is an empty 'surveyDate' attribute.	'' is not a valid value for 'date'. [Line X, Column X]
LandXML/Survey/InstrumentSetup	There is no 'InstrumentSetup' element.	Invalid content was found starting with element 'ObservationGroup'. One of '{Equipment, InstrumentSetup}' is expected. [Line X, Column X]
	There is no 'id' attribute.	Attribute 'id' must appear on element 'InstrumentSetup'. [Line X, Column X]
	There is an empty 'id' attribute.	'' is not a valid value for 'NCName'. [Line X, Column X]
	There is no 'stationName' attribute.	Attribute 'stationName' must appear on element 'InstrumentSetup'. [Line X, Column X]
	There is an empty 'stationName' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'instrumentHeight' attribute.	Attribute 'instrumentHeight' must appear on element 'InstrumentSetup'. [Line X, Column X]
	There is an empty 'instrumentHeight' attribute.	'' is not a valid value for 'double'. [Line X, Column X]
LandXML/Survey/InstrumentSetup/InstrumentPoint	There is no 'InstrumentPoint' element.	The content of element 'InstrumentSetup' is not complete. One of '{InstrumentPoint}' is expected. [Line X, Column X]
	There are multiple 'InstrumentPoint' elements.	Invalid content was found starting with element 'InstrumentPoint'. One of '{Backsight, TargetSetup, RawObservation, ObservationGroup, ControlChecks, FieldNote, Feature}' is expected. [Line X, Column X]
	The 'pntRef' attribute does not match any 'CgPoint@name' attribute.	InstrumentPoint with pntRef attribute 'ABC-SP200005' does not refer to any CgPoint names.
LandXML/Survey/ObservationGroup	There is no 'ObservationGroup' element.	The content of element 'Survey' is not complete. One of '{InstrumentSetup, ObservationGroup}' is expected. [Line X, Column X]
	There is no 'id' attribute.	Attribute 'id' must appear on element 'ObservationGroup'. [Line X, Column X]
	There is an empty 'id' attribute.	'' is not a valid value for 'NCName'. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
LandXML/Survey/Observation Group/ReducedObservation	There is no 'ReducedObservation' element.	The content of element 'ObservationGroup' is not complete. One of '{TargetPoint, ReducedObservation}' is expected. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'ReducedObservation'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'setupID' attribute.	Attribute 'setupID' must appear on element 'ReducedObservation'. [Line X, Column X]
	There is an empty 'setupID' attribute.	'' is not a valid value for 'NCName'. [Line X, Column X]
	The 'setupID' attribute does not match any 'InstrumentSetup@id' attribute.	
	There is no 'targetSetupID' attribute.	Attribute 'targetSetupID' must appear on element 'ReducedObservation'. [Line X, Column X]
	There is an empty 'targetSetupID' attribute.	'' is not a valid value for 'NCName'. [Line X, Column X]
	The 'targetSetupID' attribute does not match any 'InstrumentSetup@id' attribute.	
	There is no 'horizAngle' or 'azimuth' attribute.	A ReducedObservation '3' must have either a horizAngle or azimuth attribute but not both.
	Both 'horizAngle' and 'azimuth' attributes are present.	A ReducedObservation '3' must have either a horizAngle or azimuth attribute but not both.
	The 'horizAngle' attribute is provided but no 'targetSetup2ID' attribute is present.	A ReducedObservation '3' that measures angles must have a targetSetup2ID attribute.
	The 'horizAngle' attribute is provided but no 'angleType' attribute is present.	A ReducedObservation '3' that measures angles must have an angleType attribute.
	The attribute 'angleType' = "Adopted" is provided but no 'adoptedAngleSurvey' attribute is present.	A ReducedObservation '3' that has an angleType = Adopted must have an adoptedAngleSurvey attribute.

ePlan Element	Attribute Validation	Reason (error message given)
	The 'azimuth' attribute is provided but no 'azimuthType' attribute is present.	A ReducedObservation '3' that measures azimuths must have an azimuthType attribute.
	There is an empty 'azimuthType' attribute.	Value '' is not facet-valid with respect to enumeration '[Adopted, Balance, Calculated, Deduced, Measured, Original, Scaled]'. It must be a value from the enumeration. [Line X, Column X]
	The 'azimuthType' attribute is not a valid enumeration value.	Value 'InvalidType' is not facet-valid with respect to enumeration '[Adopted, Balance, Calculated, Deduced, Measured, Original, Scaled]'. It must be a value from the enumeration. [Line X, Column X]
	The attribute 'azimuthType' = "Adopted" but no 'adoptedAzimuthSurvey' attribute is present.	A ReducedObservation '3' that has an azimuthType = Adopted must have an adoptedAzimuthSurvey attribute.
	No 'horizDistance', 'MSLDistance', 'spherDistance', 'vertDistance' or 'slopeDistance' attribute is provided.	A ReducedObservation '3' must have at least one of horizDistance, MSLDistance, spherDistance, vertDistance or slopeDistance attributes.
	There is no 'distanceType' attribute.	A ReducedObservation '3' must have a distanceType attribute.
	There is an empty 'distanceType' attribute.	Value '' is not facet-valid with respect to enumeration '[Adopted, Balance, Calculated, Deduced, Measured, Original, Scaled]'. It must be a value from the enumeration. [Line X, Column X]
	The 'distanceType' attribute is not a valid enumeration value.	Value 'InvalidType' is not facet-valid with respect to enumeration '[Adopted, Balance, Calculated, Deduced, Measured, Original, Scaled]'. It must be a value from the enumeration. [Line X, Column X]
	The attribute 'distanceType' = "adopted" or "balance" but no 'adoptedDistanceSurvey' attribute is present.	A ReducedObservation '3' that has a distanceType = Adopted must have an adoptedDistanceSurvey attribute.
	There is no 'purpose' attribute.	Attribute 'purpose' must appear on element 'ReducedObservation'. [Line X, Column X]
	There is an empty 'purpose' attribute.	Value '' is not facet-valid with respect to enumeration '[normal, check, backsight, foresight, traverse, sideshot, resection, levelLoop, digitalLevel, remoteElevation, reciprcalObservation, topo, cutSheets, asbuilt]'. It must be a value from the enumeration. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	The 'purpose' attribute is not a valid enumeration value.	Value 'InvalidPurpose' is not facet-valid with respect to enumeration '[normal, check, backsight, foresight, traverse, sideshot, resection, levelLoop, digitalLevel, remoteElevation, recipricalObservation, topo, cutSheets, asbuilt]'. It must be a value from the enumeration. [Line X, Column X]
	The 'coordGeomRefs' attribute does not match any 'CoordGeom@name' attribute.	ReducedObservation '3' with coordGeomRefs attribute CG-ABC-SP200005 does not refer to any CoordGeom names.
LandXML/Survey/Observation Group/ReducedArcObservation	There is no 'name' attribute.	Attribute 'name' must appear on element 'ReducedArcObservation'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'setupID' attribute.	Attribute 'setupID' must appear on element 'ReducedArcObservation'. [Line X, Column X]
	There is an empty 'setupID' attribute.	'' is not a valid value for 'NCName'. [Line X, Column X]
	The 'setupID' attribute does not match any of the 'InstrumentSetup@id' attributes.	
	There is no 'targetSetupID' attribute.	Attribute 'targetSetupID' must appear on element 'ReducedArcObservation'. [Line X, Column X]
	There is an empty 'targetSetupID' attribute.	'' is not a valid value for 'NCName'. [Line X, Column X]
	The 'targetSetupID' attribute does not match any of the 'InstrumentSetup@id' attributes.	
	There is no 'chordAzimuth' attribute.	Attribute 'chordAzimuth' must appear on element 'ReducedArcObservation'. [Line X, Column X]
	There is an empty 'chordAzimuth' attribute.	'' is not a valid value for 'double'. [Line X, Column X]
	There is no 'radius' attribute.	Attribute 'radius' must appear on element 'ReducedArcObservation'. [Line X, Column X]
	There is an empty 'radius' attribute.	'' is not a valid value for 'double'. [Line X, Column X]
	There is no 'length' attribute.	Attribute 'length' must appear on element 'ReducedArcObservation'. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	There is an empty 'length' attribute.	'' is not a valid value for 'double'. [Line X, Column X]
	There is no 'rot' attribute.	Attribute 'rot' must appear on element 'ReducedArcObservation'. [Line X, Column X]
	There is an empty 'rot' attribute.	Value '' is not facet-valid with respect to enumeration '[cw, ccw]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'arcType' attribute.	Attribute 'arcType' must appear on element 'ReducedArcObservation'. [Line X, Column X]
	There is an empty 'arcType' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The attribute 'arcType' = "adopted" but there is no 'adoptedSurvey' attribute present.	A ReducedArcObservation '2' that has an arcType = Adopted must have an adoptedSurvey attribute
LandXML/Survey/Observation Group/RedHorizontalPosition	There is no 'name' attribute.	Attribute 'name' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The 'name' attribute is not unique.	Duplicate key value [649] declared for identity constraint of element "LandXML". [Line X, Column X]
	There is no 'setupID' attribute.	Attribute 'setupID' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	There is an empty 'setupID' attribute.	'' is not a valid value for 'NCName'. [Line X, Column X]
	The 'setupID' attribute does not match any of the 'InstrumentSetup@id' attributes.	There is no ID/IDREF binding for IDREF 'IS-ABC-SP204171'. [Line X, Column X]
	There is no 'equipmentUsed' attribute.	Attribute 'equipmentUsed' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	There is an empty 'equipmentUsed' attribute.	Value '' is not facet-valid with respect to enumeration '[Total Station, Theodolite EDM, Theodolite Tape, GPS, Scale, Other, Unknown]'. It must be a value from the enumeration. [Line X, Column X]
	The 'equipmentUsed' attribute is not a valid enumeration value.	Value 'Guestimate' is not facet-valid with respect to enumeration '[Total Station, Theodolite EDM, Theodolite Tape, GPS, Scale, Other, Unknown]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'date' attribute.	Attribute 'date' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	There is an empty 'date' attribute.	'' is not a valid value for 'date'. [Line X, Column X]
	There is no 'purpose' attribute.	Attribute 'purpose' must appear on element 'RedHorizontalPosition'. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	There is an empty 'purpose' attribute.	Value '' is not facet-valid with respect to enumeration '[normal, check, backsight, foresight, traverse, sideshot, resection, levelLoop, digitalLevel, remoteElevation, recipricalObservation, topo, cutSheets, asbuilt]'. It must be a value from the enumeration. [Line X, Column X]
	The 'purpose' attribute is not a valid enumeration value.	Value 'InvalidPurpose' is not facet-valid with respect to enumeration '[normal, check, backsight, foresight, traverse, sideshot, resection, levelLoop, digitalLevel, remoteElevation, recipricalObservation, topo, cutSheets, asbuilt]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'horizontalDatum' attribute.	Attribute 'horizontalDatum' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	There is an empty 'horizontalDatum' attribute.	Attribute 'name' must appear on element 'Monument'. [Line X, Column X]
	There is no 'latitude' attribute.	Attribute 'latitude' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	There is an empty 'latitude' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'longitude' attribute.	Attribute 'longitude' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	There is an empty 'longitude' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'horizontalFix' attribute.	Attribute 'horizontalFix' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	The is an empty 'horizontalFix' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'currencyDate' attribute.	Attribute 'currencyDate' must appear on element 'RedHorizontalPosition'. [Line X, Column X]
	There is an empty 'currencyDate' attribute.	CIF contains an empty attribute. [Line X, Column X]
LandXML/Monuments/Monument	There is no 'Monument' element.	The content of element 'Monuments' is not complete. One of '{Monument}' is expected. [Line X, Column X]
	There is no 'type' attribute.	Attribute 'type' must appear on element 'Monument'. [Line X, Column X]
	There is an empty 'type' attribute.	Value '' is not facet-valid with respect to enumeration '[bolt, bottle, deep driven rod, disk, drill hole, nail, not monumented, numbered screw, minimark, occupation, other, peg, pin, plaque, plug, reference tree, screw, spike, star picket, star picket with collar, tube]'. It must be a value from the enumeration. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	The 'type' attribute is not a valid enumeration value.	Value 'InvalidType' is not facet-valid with respect to enumeration '[bolt, bottle, deep driven rod, disk, drill hole, nail, not monumented, numbered screw, minimark, occupation, other, peg, pin, plaque, plug, reference tree, screw, spike, star picket, star picket with collar, tube]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'pntRef' attribute.	Attribute 'pntRef' must appear on element 'Monument'. [Line X, Column X]
	There is an empty 'pntRef' attribute.	Monument with pntRef attribute '' does not refer to any CgPoint names
	The 'pntRef' attribute does not match any of the 'CgPoint@name' attributes.	Monument with pntRef attribute 'ABC-SP200005' does not refer to any CgPoint names.
	There is no 'state' attribute.	Attribute 'state' must appear on element 'Monument'. [Line X, Column X]
	There is an empty 'state' attribute.	Value '' is not facet-valid with respect to enumeration '[Adopted, Disturbed, Found, New, Original, Replaced]'. It must be a value from the enumeration. [Line X, Column X]
	The 'state' attribute is not a valid enumeration value.	Value 'InvalidState' is not facet-valid with respect to enumeration '[Adopted, Disturbed, Found, New, Original, Replaced]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'condition' attribute.	Attribute 'condition' must appear on element 'Monument'. [Line X, Column X]
	There is an empty 'condition' attribute.	Value '' is not facet-valid with respect to enumeration '[buried, damaged, destroyed, disturbed, gone, not accessible, not found, not specified, reliable, remains, removed, submerged, temporary, threatened, unstable]'. It must be a value from the enumeration. [Line X, Column X]
	The 'condition' attribute is not a valid enumeration value.	Value 'InvalidCondition' is not facet-valid with respect to enumeration '[buried, damaged, destroyed, disturbed, gone, not accessible, not found, not specified, reliable, remains, removed, submerged, temporary, threatened, unstable]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'Monument'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is an empty 'desc' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The attribute 'type' = "occupation" or "other" but there is no 'desc' attribute present.	A Monument '2' that has a type = other must have a desc attribute.
ePlan Element		

ePlan Element	Attribute Validation	Reason (error message given)
LandXML/Parcels	There is no 'Parcels' element.	Invalid content was found starting with element 'CgPoints'. One of '{Parcels}' is expected. [Line X, Column X]
LandXML/Parcels/Parcel	There is no 'Parcel' element.	The content of element 'Parcels' is not complete. One of '{Parcel}' is expected. [Line X, Column X]
	There is no 'name' attribute.	Attribute 'name' must appear on element 'Parcel'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is an empty 'desc' attribute.	CIF contains an empty attribute. [Line X, Column X]
	The attribute 'class' = "road", "hydrography" or "administrative area" and there is no 'desc' attribute.	A Parcel 'R3' that has a class = Road must have a desc attribute.
	There is no 'parcelType' attribute.	Attribute 'parcelType' must appear on element 'Parcel'. [Line X, Column X]
	There is an empty 'parcelType' attribute.	Value '' is not facet-valid with respect to enumeration '[adminarea, multipart, part, single]'. It must be a value from the enumeration. [Line X, Column X]
	The 'parcelType' attribute is not a valid enumeration value.	Value 'InvalidType' is not facet-valid with respect to enumeration '[adminarea, multipart, part, single]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'state' attribute.	Attribute 'state' must appear on element 'Parcel'. [Line X, Column X]
	There is an empty 'state' attribute.	Value '' is not facet-valid with respect to enumeration '[affected, created, encroached, extinguished, referenced, proposed, existing, adjoining]'. It must be a value from the enumeration. [Line X, Column X]
	The 'state' attribute is not a valid enumeration value.	Value 'InvalidState' is not facet-valid with respect to enumeration '[affected, created, encroached, extinguished, referenced, proposed, existing, adjoining]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'class' attribute.	Attribute 'class' must appear on element 'Parcel'. [Line X, Column X]
	There is an empty 'class' attribute.	Value '' is not facet-valid with respect to enumeration '[Administrative Area, Building, Caveat, Common Property, Covernant, Easement, Footprint, Hydrography, Lease, License, Lot, Permit, Profit a Prende, Road]'. It must be a value from the enumeration. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	The 'class' attribute is not a valid enumeration value.	Value 'InvalidClass' is not facet-valid with respect to enumeration '[Administrative Area, Building, Caveat, Common Property, Covernant, Easement, Footprint, Hydrography, Lease, License, Lot, Permit, Profit a Prende, Road]'. It must be a value from the enumeration. [Line X, Column X]
	The 'useOfParcel' attribute is not a valid enumeration value.	Value 'InvalidUse' is not facet-valid with respect to enumeration '[(Access Channel), (Artificial Waterway), (Canal), Balcony, Bay, Building Footprint, Carport, Coastal Management Zone, County, Courtyard, Creek, Deck, Erosion Prone Area (BP Act), Garage, Local Government, Locality, Main, Ocean, Parish, Patio, Porch, Private Yard, Public Use Land, Public Use Land (Aboriginal Purposes), Public Use Land (Beach Protection and Coastal Management), Public Use Land (Cemeteries, crematoriums and mortuaries), Public Use Land (Drainage), Public Use Land (Environmental Purposes), Public Use Land (Heritage, historical and cultural purposes), Public Use Land (Natural Resource Management), Public Use Land (Navigational Purposes), Public Use Land (Open Space and Buffer Zones), Public Use Land (Park), Public Use Land (Parks and gardens), Public Use Land (Public Halls), Public Use Land (Public Toilet Facilities), Public Use Land (Public boat ramps, jetties and landing places), Public Use Land (Reserve), Public Use Land (Roads), Public Use Land (Scenic Purposes), Public Use Land (Scientific Purposes), Public Use Land (Showgrounds), Public Use Land (Sport and Recreation), Public Use Land (Strategic land management), Public Use Land (Torres Strait Islander Purposes), Public Use Land (Travelling stock requirements), Public Use Land (Watering-places), Remainder, River, Road License, Roofgarden, Storage, Verandah, Void, Volumetric Lot Footprint]'. It must be a value from the enumeration. [Line X, Column X]
	There is no 'parcelFormat' attribute.	Attribute 'parcelFormat' must appear on element 'Parcel'. [Line X, Column X]
	There is an empty 'parcelFormat' attribute.	Value '' is not facet-valid with respect to enumeration '[Building, Restricted, Standard, Volumetric]'. It must be a value from the enumeration. [Line X, Column X]
	The 'parcelFormat' attribute is not a valid enumeration value.	Value 'InvalidFormat' is not facet-valid with respect to enumeration '[Building, Restricted, Standard, Volumetric]'. It must be a value from the enumeration. [Line X, Column X]
LandXML/Parcels/Parcel/CoordGeom	There are no 'Line', 'IrregularLine' or 'Curve' elements are present.	A CoordGeom on Parcel 'W4' must have at least one Line, IrregularLine or Curve.
LandXML/Parcels/Parcel/CoordGeom/Line/Start	There is no 'Start' element.	Invalid content was found starting with element 'End'. One of '{Start}' is expected. [Line X, Column X]
	There is no 'pntRef' attribute.	Attribute 'pntRef' must appear on element 'Start'. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	There is an empty 'pntRef' attribute.	Start with pntRef attribute '' does not refer to any CgPoint names.
	The 'pntRef' attribute does not match any of the 'CgPoint@name' attributes.	Start with pntRef attribute 'AAAA' does not refer to any CgPoint names.
LandXML/Parcels/Parcel/CoordGeom/Line/End	There is no 'End' element.	The content of element 'Line' is not complete. One of '{End}' is expected. [Line X, Column X]
	There is no 'pntRef' attribute.	Attribute 'pntRef' must appear on element 'End'. [Line X, Column X]
	There is an empty 'pntRef' attribute.	End with pntRef attribute '' does not refer to any CgPoint names.
	The 'pntRef' attribute does not match any of the 'CgPoint@name' attributes.	End with pntRef attribute 'AAAA' does not refer to any CgPoint names.
LandXML/Parcels/Parcel/CoordGeom/IrregularLine/Start	There is no 'Start' element.	Invalid content was found starting with element 'End'. One of '{Start}' is expected. [Line X, Column X]
	There is no 'pntRef' attribute.	Attribute 'pntRef' must appear on element 'Start'. [Line X, Column X]
	There is an empty 'pntRef' attribute.	Start with pntRef attribute '' does not refer to any CgPoint names.
	The 'pntRef' attribute does not match any of the 'CgPoint@name' attributes.	Start with pntRef attribute 'ABC-SP200097' does not refer to any CgPoint names.
LandXML/Parcels/Parcel/CoordGeom/IrregularLine/End	There is no 'End' element.	Invalid content was found starting with element 'PntList2D'. One of '{End}' is expected. [Line X, Column X]
	There is no 'pntRef' attribute.	Attribute 'pntRef' must appear on element 'End'. [Line X, Column X]
	There is an empty 'pntRef' attribute.	End with pntRef attribute '' does not refer to any CgPoint names.
	The 'pntRef' attribute does not match any of the 'CgPoint@name' attributes.	End with pntRef attribute 'ABC-SP200097' does not refer to any CgPoint names.
LandXML/Parcels/Parcel/CoordGeom/IrregularLine/PntList2D	There is no 'PntList2D' element.	The content of element 'IrregularLine' is not complete. One of '{PntList2D, PntList3D}' is expected. [Line X, Column X]
LandXML/Parcels/Parcel/CoordGeom/Curve	There is no 'rot' attribute.	Attribute 'rot' must appear on element 'Curve'. [Line X, Column X]
	There is an empty 'rot' attribute.	Value '' is not facet-valid with respect to enumeration '[cw, ccw]'. It must be a value from the enumeration. [Line X, Column X]

ePlan Element	Attribute Validation	Reason (error message given)
	The 'rot' attribute is not a valid enumeration value.	Value 'Invalid' is not facet-valid with respect to enumeration '[cw, ccw]'. It must be a value from the enumeration. [Line X, Column X]
LandXML/Parcels/Parcel/CoordGeom/Curve/Start	There is no 'Start' element.	Invalid content was found starting with element 'Center'. One of '{Start}' is expected. [Line X, Column X]
	There is no 'pntRef' attribute.	Attribute 'pntRef' must appear on element 'Start'. [Line X, Column X]
	There is an empty 'pntRef' attribute.	Start with pntRef attribute '' does not refer to any CgPoint names.
	The 'pntRef' attribute does not match any of the 'CgPoint@name' attributes.	Start with pntRef attribute 'ABC-SP207048' does not refer to any CgPoint names.
LandXML/Parcels/Parcel/CoordGeom/Curve/End	There is no 'End' element.	The content of element 'Curve' is not complete. One of '{End}' is expected. [Line X, Column X]
	There is no 'pntRef' attribute.	Attribute 'pntRef' must appear on element 'End'. [Line X, Column X]
	There is an empty 'pntRef' attribute.	End with pntRef attribute '' does not refer to any CgPoint names.
	The 'pntRef' attribute does not match any of the 'CgPoint@name' attributes.	End with pntRef attribute 'ABC-SP207048' does not refer to any CgPoint names.
LandXML/Parcels/Parcel/CoordGeom/Curve/Center	There is no 'Center' element.	Invalid content was found starting with element 'End'. One of '{Center}' is expected. [Line X, Column X]
	There is no 'pntRef' attribute.	Attribute 'pntRef' must appear on element 'Center'. [Line X, Column X]
	There is an empty 'pntRef' attribute.	Curve Centre with pntRef attribute '' does not refer to any CgPoint names.
	The 'pntRef' attribute does not match any of the 'CgPoint@name' attributes.	Curve Centre with pntRef attribute 'ABC123' does not refer to any CgPoint names.
LandXML/Parcels/Parcel/Parcels/Parcel	There is no 'Parcel' element.	The content of element 'Parcels' is not complete. One of '{Parcel}' is expected. [Line X, Column X]
	The is no 'name' attribute.	Attribute 'name' must appear on element 'Parcel'. [Line X, Column X]
	There is an empty 'name' attribute.	CIF contains an empty attribute. [Line X, Column X]
	There is no 'pclRef' attribute.	Attribute 'pclRef' must appear on element 'Parcel'. [Line X, Column X]
	There is an empty 'pclRef' attribute.	Parcel Allocation with pclRef attribute '' does not refer to any Parcel names.

ePlan Element	Attribute Validation	Reason (error message given)
	The 'pclRef' attribute does not match any of the 'Parcel@name' attributes.	Parcel Allocation with pclRef attribute 'ABC' does not refer to any Parcel names.

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