

Victorian ePlan Protocol

Version 1.10

January 2019

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This document outlines the mapping of the Victorian ePlan Protocol to LandXML. Each heading represents an element in the schema.

This document is intended for ePlan Software Developers.

Legend

Type Column	Required Column
Simple LandXML types: string, double, date, ID, IDRef vic enum = Victorian Enumerations Schema, lxml enum = LandXML Enumerations, vic ref = Victorian Reference Data List	R = Required, CR = Conditionally Required, O = Optional

1 General

1.1 XML Prolog

```
<?xml version="1.0" encoding="utf-8"?>
```

1.2 LandXML

Child Elements	Cardinality
Units	1
CoordinateSystem	1
Application	1
Amendment	0 - *
CgPoints	0 - *
Parcels	1
PlanFeatures	0 - *
Survey	1
Monuments	0 - 1
FeatureDictionary	1

Attribute	Type	Required	Description
Date	string	R	Date this version of the EPLAN was created. ISO 8601 format. eg 2018-06-30
time	string	R	Time this version of the EPLAN was created. ISO 8601 format. eg 13:56:48
version	double	R	[Land Use Victoria (LUV) Use Only] Version number of this EPLAN, based on the Victorian protocol schema (.xsd) version. This can be derived from the Victorian protocol schema file name. eg 1.10
xmlns	string	R	Required if using namespaces. XML namespace, set to: http://www.landxml.org/schema/LandXML-1.2
xmlns:xsi	string	R	XML schema instance, set to: http://www.w3.org/2001/XMLSchema-instance

Attribute	Type	Required	Description
xsi:schemaLocation	string	R	LandXML Schema Location for validation, set to: http://www.landxml.org/schema/LandXML-1.2 http://www.landxml.org/schema/LandXML-1.2/LandXML-1.2.xsd

1.3 Units and Metric

Standard code for all files.

```
<Units>
  <Metric areaUnit="squareMeter" linearUnit="meter" volumeUnit="cubicMeter"
  temperatureUnit="celsius" pressureUnit="milliBars"
  angularUnit="decimal dd.mm.ss" directionUnit="decimal dd.mm.ss"/>
</Units>
```

NOTE: Any "double" field that uses decimal degrees minutes seconds must use the following numbering format: DD.MMSS For example, 12.2330 is the equivalent of 12° 23' 30"

1.4 CoordinateSystem

Attribute	Type	Required	Description
desc	string	O	Describes the coordinate system.
datum	vic enum	R	The bearing datum of the plan eg <i>Approx True North</i> , <i>MGA2020_Zone55</i> .
horizontalDatum	vic enum	R	Datum of CgPoint horizontal coordinates, eg <i>Local</i> , <i>MGA2020_Zone55</i> .

1.5 Application

This element is created by the software package that generates the EPLAN.

Child Elements	Cardinality
Author	0 - *

Attribute	Type	Required	Description
name	string	R	The name of the application that created the EPLAN. eg <i>Stringer ePlan</i> .
version	double	R	The version of the application eg <i>1.0</i>

1.6 Author

Attribute	Type	Required	Description
createdBy	string	R	The name of the person creating the EPLAN.

1.7 FeatureDictionary

Attribute	Type	Required	Description
name	string	R	Set to the name of the jurisdictional ePlan schema. For Victoria the value is: xml-gov-au-vic-icsm-eplan-cif-protocol This can be derived from the file name or namespace of the Victorian protocol schema.
version	string	R	The version number of the Victorian ePlan protocol schema as stated in the "version" attribute of the schema header.

1.8 Amendment

Attribute	Type	Required	Description
dealingNumber	string	R	The VOTS ¹ dealing number
amendmentDate	date	R	Date
comments	string	R	Description of the changes since previous version.

¹ Victorian Online Title System

2 Administrative Information

2.1 Survey

Child Elements	Cardinality
SurveyHeader	1
ObservationGroup	1
InstrumentSetup	1 - *

2.2 SurveyHeader

Child Elements	Cardinality
HeadOfPower	1 - *
PurposeOfSurvey	1 - *
Personnel	0 - *
AdministrativeArea	1 - *
Annotation	0 - *
FieldNote	0 - *
AdministrativeDate	0 - *

Attribute	Type	Required	Description
name	string	R	The plan number with check digit eg PS123456X, PS123456X/S1.
jurisdiction	vic enum	R	"Victoria".
surveyorFirm	string	R	The name of the surveying firm. All text from the surveyors stamp goes here, formatted in the following way: {Trading Name}
 {Company Name}
 {Office Address}
 {Mailing Address}
 {Phone}
 {Fax}
 {ABN}
 {Website URL} Each field can contain any characters including spaces. 
 is the XML code for new line.
surveyorReference	string	R	A space for the surveying firms internal reference ID and version number, eg 123-Ver01. Note: 'Ver' is case sensitive.
surveyFormat	vic enum	O	See VIC enumerations schema.
type	lxml enum	R	Maps to Survey/Non-Survey notation in the notations panel. Computed = Non-Survey; Surveyed = Survey; Compiled = Partial Survey.

2.3 HeadOfPower

Attribute	Type	Required	Description
name	vic enum	R	The head of power specifies the legislation this plan is based on. Several head of power values can be specified. See VIC enumerations schema.

2.4 PurposeOfSurvey

Attribute	Type	Required	Description
name	vic enum	R	PurposeOfSurvey captures the application type eg "Section 22-Plan of Subdivision". Multiple purposes can be listed however there is an order of precedence and rules about which purposes can be mixed. See VIC enumerations schema.

2.5 Personnel

Attribute	Type	Required	Description
name	string	R	Full name of the licensed surveyor that is the registered name with the Surveyors Registration Board of Victoria. Note: It is not case sensitive.
role	vic enum	R	"Surveyed By".
regType	vic enum	R	"Licensed Cadastral Surveyor".
regNumber	string	R	This is the surveyor's registration number with the Surveyors Registration Board of Victoria.

2.6 AdministrativeArea

Attribute	Type	Required	Description
adminAreaType	vic enum	R	The administrative area type eg LGA, Parish. See VIC enumerations schema.
adminAreaName	string	R	The full name of the administrative area.
adminAreaCode	string	R	The code or identifier of the administrative area if applicable.

2.7 Annotation

Attribute	Type	Required	Description
type	vic enum	R	Refers to the Name element of the annotation in the annotations schema file. The value is listed in the enumerations schema under <code>annotationType</code> . See VIC enumerations schema.
name	ID	R	This is the unique name of the Annotation and is used for tracking the reference and amendments. The name matches values in a standard list of enumerations supplied by Land Use Victoria.
desc	string	R	The actual text of the statement eg "Total area of new road 5.123ha". This description may be required in a specific format as set out in regulations.
pclRef	string	CR	A list of one or more space separated <code>Parcel@name</code> attributes. An annotation can refer to 1 or many parcels. This attribute is excluded if annotation applies to whole plan.

2.8 AdministrativeDate

Internal Land Use Victoria use only.

Attribute	Type	Required	Description
adminDateType	vic enum	R	List of date types.
adminDate	date	R	The date value, eg "2018-06-05".

3 Spatial Components

3.1 Parcels

Child Elements	Cardinality
Parcel	1 - *

3.2 Parcel

Also see	ePlan Handbook §5 Parcel Definition
----------	-------------------------------------

Child Elements	Cardinality
Center	0 - 1
CoordGeom	0 - 1
Parcels	0 - * (AllocationsParcelsType in VIC Schema)
Title	0 - *
LocationAddress	0 - *

Attribute	Type	Required	Description
name	string	R	See ePlan Handbook §2 Element Naming Conventions.
old	string	O	The PFI ² for parcels coming from Vicmap. These values are not required for incoming plans.
area	double	CR	The legal area. May be required, and must be in units as specified in Units element.
desc	string	CR	If the parcel class is Road , description must contain a road name or label, eg "Junction Street" or "Government Road". If the parcel class is Administrative Area , description must contain a name, eg "Bendigo". If the extinguished parcel is a crown allotment, description must contain a name to replace the crown allotment name (eg "TP123456"). If the parcel has "Not In Subdivision" status, description of the referenced parcel contains text eg "N.I.S" instead of parcel name.
owner	string	CR	For easement benefits and vesting
parcelType	vic enum	R	The parcel construct type, eg single , multipart , part , administrative .
state	ixml enum	R	The state of the parcel in the context of other parcels on the plan, eg affected , created , extinguished .
class	vic enum	R	The type of registrable interest this parcel represents, eg Lot , Stage Lot , Common Property , Road , Easement .
useOfParcel	vic ref	CR	Where further information is required to define the use of a parcel, eg various easement purposes, and Limited/Limited to CP/Unlimited for Owners Corporation Parcels.

² Persistent Feature Identifier

Attribute	Type	Required	Description
parcelFormat	vic ref	CR	The type of boundaries the parcel is described by, eg Geometry, Standard, 2D Building . Geometry is only used for spatial easements.

3.3 Parcel Linkage (AllocationsParcelsType in Victorian Schema)

A parcel linkage is a parcel nested inside another parcel. These elements have different required attributes.

Also see	ePlan Handbook §5 Parcel Definition
----------	-------------------------------------

Attribute	Type	Required	Description
name	string	R	See ePlan Handbook §2 Element Naming Conventions.
pclRef	string	R	Reference used to link Parcel elements.
lotEntitlements	string	CR	The lot entitlement for Owners Corporation, Body Corporate or scheme land entity.
liabilityApportionment	string	CR	The liability for Owners Corporation, Body Corporate or scheme land entity.

3.4 Title

Attribute	Type	Required	Description
name	string	R	The reference of the legal document or parcel.
titleType	vic enum	R	Types of titles. see VIC enumerations schema.

3.5 LocationAddress

Child Elements	Cardinality
ComplexName	0 - *
RoadName	1 - *
AdministrativeArea	1 - *
AddressPoint	0 - *

Attribute	Type	Required	Description
addressType	vic enum	R	The type of the address. A parcel could have many addresses as it could have several frontages and be used for different purposes. For example it may have a primary address and several aliases. VicMap Address Field: ADDRESS_CLASS
flatType	vic ref	O	The type of the flat, eg, unit, townhouse, etc VicMap Address Field: BLG_UNIT_TYPE
flatNumber	string	O	The number of the flat VicMap Address Field: BLG_UNIT_PREFIX_1, BLG_UNIT_ID_1, BLG_UNIT_SUFFIX_1, BLG_UNIT_PREFIX_2, BLG_UNIT_ID_2, BLG_UNIT_SUFFIX_2 Note: If more than one number is supplied, values are concatenated and separated by a space.

Attribute	Type	Required	Description
floorLevelType	vic ref	O	The type of the floor level. VicMap Address Field: FLOOR_TYPE
floorLevelNumber	string	O	The number of the floor level. VicMap Address Field: FLOOR_PREFIX_1, FLOOR_NO_1, FLOOR_SUFFIX_1, FLOOR_PREFIX_2, FLOOR_NO_2, FLOOR_SUFFIX_2 Note: If more than one number is supplied, values are concatenated and separated by a space.
numberFirst	int	O	The street address number or the first street address number in a range of numbers. VicMap Address Field: HOUSE_PREFIX_1, HOUSE_NUMBER_1 Note: If prefix is used, it is concatenated and separated with a space.
numberSuffixFirst	string	O	The alpha suffix of the first street address number. eg, A VicMap Address Field: HOUSE_SUFFIX_1
numberLast	int	O	The last street address number in a range of numbers. VicMap Address Field: HOUSE_PREFIX_2, HOUSE_NUMBER_2 Note: If prefix is used, it is concatenated and separated with a space.
numberSuffixLast	string	O	The alpha suffix of the last street address number. eg, B VicMap Address Field: HOUSE_SUFFIX_2

3.6 ComplexName

Attribute	Type	Required	Description
desc	string	R	The site name, building name or other name. VicMap Address Field: BUILDING_NAME, COMPLEX_NAME
priority	int	R	The order of significance of the ComplexName in relation to other ComplexName values, "1" being the most significant.

3.7 RoadName

Attribute	Type	Required	Description
roadNameType	vic ref	R	The type of the road name, eg Street, Lane, etc. VicMap Address Field: ROAD_TYPE
roadName	string	R	The name of the road (without Type or suffix). VicMap Address Field: ROAD_NAME
roadNameSuffix	vic ref	O	The suffix type of the road name, eg, East, Upper, West, etc. VicMap Address Field: ROAD_SUFFIX
roadType	vic enum	R	The type of the road, eg, public or private.
pclRef	string	O	Reference to physical road parcel.

3.8 AdministrativeArea

Attribute	Type	Required	Description
adminAreaType	vic enum	R	"Locality"

Attribute	Type	Required	Description
adminAreaName	string	R	The full name of the administrative area. VicMap Address Field: For adminAreaType of "Locality", adminAreaName is mapped to LOCALITY_NAME
adminAreaCode	string	O	The code or identifier of the administrative area. VicMap Address Field: For adminAreaType of "Locality", adminAreaCode is mapped to POSTCODE

3.9 AddressPoint

Attribute	Type	Required	Description
addressPointType	vic enum	R	List of address point types, in Victoria there are two types: Entrance for frontages of buildings, and Virtual for all other cases.
pntRef	IDREF	R	Reference to the <code>name</code> attribute of the <code>CgPoint</code> representing the location of the address point. CgPoints used for Center elements must have pntSurv="sideshot" and state="existing".

3.10 PlanFeatures

Child Elements	Cardinality
PlanFeature	1 - *

Attribute	Type	Required	Description
name	string	R	"Feature"
desc	string	O	Used to categorise different types of plan features.

3.11 PlanFeature

Child Elements	Cardinality
CoordGeom	1

Attribute	Type	Required	Description
name	ID	R	Unique ePlan identifier. See ePlan Handbook §2 Element Naming Conventions.
desc	string	O	Label of the feature.

3.12 CgPoints

Child Elements	Cardinality
CgPoint	1 - *

Attribute	Type	Required	Description
zoneNumber	vic enum	CR	If the datum as specified by the <code>CoordinateSystem</code> element is MGA then this field specifies the MGA zone of the plan. This zone also applies to coordinates in RedHorizontalPosition.
desc	string	O	Description of the collection of coordinate geometry points.

Attribute	Type	Required	Description
name	string	O	Name of the collection of coordinate geometry points.

3.13 CgPoint

Element Content	<p>The coordinates are in northing-easting order and are separated by a space. These coordinates are used for rendering purposes only. The coordinates are generated by the surveyor or software packages and do not represent the true coordinates of survey points.</p> <pre><CgPoint name="CGPNT-1">5814496.815 350991.357</CgPoint></pre>
-----------------	---

Attribute	Type	Required	Description														
oID	string	O	PFI number is populated for existing points in VicMap.														
name	ID	R	Unique ePlan identifier for the point. See ePlan Handbook §2 Element Naming Conventions for Point Naming Conventions.														
pntSurv	lxml enum	R	Usage summary: <table border="1"> <tr> <td>Parcel Boundaries</td> <td>boundary, natural boundary</td> </tr> <tr> <td>Admin Area Boundaries</td> <td>administrative</td> </tr> <tr> <td>PMs and PCMs</td> <td>control</td> </tr> <tr> <td>Reference Marks</td> <td>reference</td> </tr> <tr> <td>Instrument Points</td> <td>traverse</td> </tr> <tr> <td>Parcel Centres, Radius centres, splay corner and address points</td> <td>sideshot</td> </tr> <tr> <td>Plan Features (except for building return)</td> <td>monument</td> </tr> </table>	Parcel Boundaries	boundary, natural boundary	Admin Area Boundaries	administrative	PMs and PCMs	control	Reference Marks	reference	Instrument Points	traverse	Parcel Centres, Radius centres, splay corner and address points	sideshot	Plan Features (except for building return)	monument
Parcel Boundaries	boundary, natural boundary																
Admin Area Boundaries	administrative																
PMs and PCMs	control																
Reference Marks	reference																
Instrument Points	traverse																
Parcel Centres, Radius centres, splay corner and address points	sideshot																
Plan Features (except for building return)	monument																
desc	string	O	Used to mark datum points, eg "Datum A".														
pntRef	IDREF	O	Reference to the <code>name</code> attribute of the linked <code>CgPoint</code> .														
state	lxml enum	R	State of the point, eg <code>existing</code> , <code>proposed</code> .														

3.14 CoordGeom

Child Elements	Cardinality
Line	0 - *
IrregularLine	0 - *
Curve	0 - *

Attribute	Type	Required	Description
name	ID	R	See ePlan Handbook §2 Element Naming Conventions.

3.15 Line

Child Elements	Cardinality
Start	1

Child Elements	Cardinality
End	1

Attribute	Type	Required	Description
desc	vic ref	CR	Required if the line is a building boundary. The physical description of building boundaries is stored in this attribute, eg <i>Median, Interior Face, Exterior Face</i> . Required if the line is used within a Plan Feature with type of chainage. The distance of line is stored in this attribute, eg 2.0.

3.16 Curve

In ePlan, a curve is defined by a radius, start and end points and rotation direction. The remaining arc information captured on Victorian plans is captured in an arc observation element.

Child Elements	Cardinality
Start	1
End	1
Center	1

Attribute	Type	Required	Description
radius	double	R	The radius of the curve.
rot	lxml enum	R	Direction from <i>Start</i> to <i>End</i> .
desc	vic ref	CR	Required if the curve is a building boundary. The physical description of building boundaries is stored in this attribute, eg <i>Median, Interior Face, Exterior Face</i> .

3.17 IrregularLine

Child Elements	Cardinality
Start	1
End	1
PntList2D	1

*The PntList2D consists of all the points between (and including) the start and end points.

Attribute	Type	Required	Description
desc	string	R	Free text description of the element. If the boundary is an irregular feature then the feature must be described, eg "The Left Bank of the Darling River" etc.
source	string	CR	Required if the line has been adopted from another source, eg a previous survey <i>SP1234</i> .

3.18 Start

Attribute	Type	Required	Description
pntRef	IDREF	R	Reference to the <i>name</i> attribute of the linked <i>CgPoint</i> .

3.19 End

Attribute	Type	Required	Description
pntRef	IDREF	R	Reference to the <code>name</code> attribute of the linked <code>CgPoint</code> .

3.20 PntList2D

Element Content	A space delimited list of coordinate values in Northing Easting pairing. <PntList2D>N ₀ E ₀ N ₁ E ₁ ... N _n E _n </PntList2D>
-----------------	---

NOTE: The first and last coordinate pair within <PntList2D> must be the same as associated Start and End points within <IrregularLine> respectively (therefore the element must contain at least two coordinate pairs).

3.21 Center

Usage	Used for parcel centroids and arc centre points.
-------	--

Attribute	Type	Required	Description
pntRef	IDREF	R	Reference to the <code>name</code> attribute of the linked <code>CgPoint</code> . CgPoints used for Center elements must have <code>pntSurv="sideshot"</code> and <code>state="existing"</code> .

3.22 ObservationGroup

Child Elements	Cardinality
ReducedObservation	0 - *
ReducedArcObservation	0 - *
RedHorizontalPosition	0 - *
RedVerticalObservation	0 - *

Attribute	Type	Required	Description
id	ID	R	See ePlan Handbook §2 Element Naming Conventions.

3.23 ReducedObservation

Child Elements	Cardinality
FieldNote	0 - *

Attribute	Type	Required	Description
name	ID	R	See ePlan Handbook §2 Element Naming Conventions.
desc	string	O	Optional description.
purpose	lxml enum	R	LandXML list of purpose values. Values used in Victoria include: <code>normal</code> – used for all boundaries <code>traverse</code> – for all traverses <code>sideshot</code> – for all radiations <code>topo</code> – for all secondary interest fixing radiations (eg to fix a floating easement to nearest lot corner).

Attribute	Type	Required	Description
setupID	IDREF	R	Reference to the <code>InstrumentSetup id</code> that this measurement is made from.
targetSetupID	IDREF	R	Reference to the <code>InstrumentSetup id</code> that this measurement is made to.
azimuth	double	R	Bearing. Units as specified in 1.3 Units and Metric.
horizDistance	double	R	Reduced horizontal distance.
azimuthAccuracy	double	O	Accuracy of the bearing. Units as specified in 1.3 Units and Metric.
equipmentUsed	vic ref	O	Equipment used for observation.
distanceAccuracy	double	O	Accuracy of the distance.
distanceType	string	O	Type of distance which can be Adopt Dimension, Computed, Derived or Measured.
azimuthType	string	O	Type of bearing which can be Adopt Dimension, Computed, Derived or Measured.
adoptedAzimuthSurvey	string	O	If the observation is adopted from a previous survey, the identifier of the survey it was adopted from.
adoptedDistanceSurvey	string	O	If the observation is adopted from a previous survey, the identifier of the survey it was adopted from.
azimuthAdoptionFactor	string	O	If the observation is adopted from a previous survey, the angle used to bring it onto the datum of this survey (a.k.a swing factor).
distanceAdoptionFactor	string	O	If the observation is adopted from a previous survey, the distance factor used to bring it onto the datum of this survey.

3.24 ReducedArcObservation

Child Elements	Cardinality
FieldNote	0 - *

Attribute	Type	Required	Description
name	ID	R	See ePlan Handbook §2 Element Naming Conventions.
desc	string	O	Optional description.
purpose	lxml enum	R	LandXML list of purpose values. Values used in Victoria include: <code>normal</code> – for all boundaries <code>topo</code> – for all secondary interest fixing radiations (eg to fix a floating easement to nearest lot corner).
setupID	IDREF	R	Reference to the <code>InstrumentSetup id</code> that this measurement is made from.
targetSetupID	IDREF	R	Reference to the <code>InstrumentSetup id</code> that this measurement is made to.
chordAzimuth	double	R	The bearing of the arc chord.
radius	double	R	Radius of the arc.
length	double	R	Reduced horizontal length of the arc.
rot	lxml enum	R	Direction of rotation from the start to the end.
equipmentUsed	vic ref	O	Equipment used for observation.

Attribute	Type	Required	Description
arcAzimuthAccuracy	double	O	Accuracy of the arc azimuth. Units as specified in 1.3 Units and Metric.
arcLengthAccuracy	double	O	Chord length
arcType	string	O	Type of arc which can be Adopt Dimension, Computed, Derived or Measured.
adoptedSurvey	string	O	If the measurement was taken from a previous survey, show the plan number.
azimuthAdoptionFactor	string	O	If the observation is adopted from a previous survey, the angle used to bring it onto the datum of this survey (a.k.a swing factor).
lengthAdoptionFactor	string	O	If the observation is adopted from a previous survey, the distance factor used to bring it onto the datum of this survey.

3.25 RedHorizontalPosition

Usage	Used for PMs and PCMs only.
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Child Elements	Cardinality
FieldNote	0 - *

Attribute	Type	Required	Description
name	ID	R	See ePlan Handbook §2 Element Naming Conventions.
oID	string	R	PM or PCM 9 figure number in SMES.
desc	string	CR	If PM, the official mark name, eg "Prahran PM 1". PCM have no official name, just the 9 figure number.
setupID	IDREF	R	Reference to the InstrumentSetup@Id that this measurement is based off.
date	string	R	Date the coordinates were instated in SMES. New marks use the date of the sketch plan creation.
horizontalDatum	vic enum	R	Horizontal datum, eg MGA94.
horizontalAdjustment	string	O	The name of the adjustment (eg the project) used to derive the measurement. For outgoing data from LUV only. Surveyors are not expected to supply this with new marks.
latitude	string	R	Official (undistorted) northing value. Zone is stored in CgPoints .
longitude	string	R	Official (undistorted) easting value. Zone is stored in CgPoints .
horizontalFix	vic ref	R	The method used to determine position of the mark eg GPSnet.
currencyDate	string	O	Date last used.
positionalUncertainty	double	O	Optional positional uncertainty.
order	vic ref	O	For PMs and PCMs.

3.26 RedVerticalObservation

Usage	Used for PMs and PCMs only.
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Child Elements	Cardinality
FieldNote	0 - *

Attribute	Type	Required	Description
name	ID	R	See ePlan Handbook §2 Element Naming Conventions.
oID	string	R	PM or PCM 9 figure number in SMES.
desc	string	CR	If PM, the official mark name, eg "Pahran PM 1". PCM have no official name, just the 9 figure number.
date	string	R	Date the coordinates were instated in SMES. New marks use the date of the sketch plan creation.
setupID	IDREF	R	Reference to the <code>InstrumentSetup id</code> that this measurement is based off.
height	double	R	The reduced level value for this point. Units are based on the unit specified for <code>linearUnit</code> in the <code>Units</code> element.
verticalDatum	vic enum	R	Vertical Datum, eg AHD71.
verticalAdjustment	string	O	The name of the adjustment (eg the project) used to derive the measurement. For outgoing data from Land Use Victoria only. Surveyors are not expected to supply this with new marks.
positionalUncertainty	double	O	Optional positional uncertainty.
order	vic ref	O	For PMs and PCMs.
verticalFix	vic ref	R	The technique used to determine the height level.
geosphoid	string	O	The geoid ellipsoid separation value used to determine the orthometric height from the ellipsoid height.
gsDatum	vic enum	O	The name of the ellipsoid used.
gsModel	vic enum	O	The geoid model used to determine the separation.

3.27 Monuments

Child Elements	Cardinality
Monument	1 - *

3.28 Monument

Attribute	Type	Required	Description
name	ID	R	See ePlan Handbook §2 Element Naming Conventions.
desc	string	CR	Surveyor's description of the monument. Required if the <code>monumentType</code> does not fully describe the monument such as "Reference Tree" or "Other". eg for PMs, "Brass plaque in concrete with beacon".
pntRef	IDREF	R	Reference to the <code>name</code> attribute of the linked <code>CgPoint</code> .
type	vic ref	R	List of various types of monuments used for PMs, PCMs and RMs. See VIC enumerations schema.

Attribute	Type	Required	Description
state	vic ref	R	Types of monument state, eg <i>Existing</i> , <i>New</i> .
condition	vic ref	R	Various types of monument conditions, eg <i>Damaged</i> , <i>OK</i> .
originSurvey	string	O	Record plan number for reference marks found from previous plan. Record the current plan number, if this is a new mark.

3.29 FieldNote

Parent Elements	Cardinality
SurveyHeader	0 - *
ReducedObservation	0 - *
ReducedArcObservation	0 - *
RedHorizontalPosition	0 - *
RedVerticalObservation	0 - *

3.30 InstrumentSetup

Child Elements	Cardinality
InstrumentPoint	1

Attribute	Type	Required	Description
id	ID	R	Unique ePlan identifier.
stationName	IDREF	R	Not used in Victoria, value must be same as <i>id</i> .
instrumentHeight	double	R	Not used in Victoria, default to 0.

3.31 InstrumentPoint

Attribute	Type	Required	Description
pntRef	IDREF	R	Reference to the <i>CgPoint</i> for this <i>InstrumentPoint</i> .