

The objective of this assignment is for Astro to review and rate the approach taken, and code used to generate a usable app based on the API provided.

Bug-free and performance is key. UI, UX does matter; however, design / graphics elements can be made a secondary concern if Job Scope does not specifically call for design skillsets.

**TASK:**

Please develop a functional mobile app demo based on the scope of work described in the assignment levels below (level 1-3), using the API provided, within the given time to complete the assignment (or 1 week– whichever is shorter). note:

1. All code must be accompanied by release notes that include citations of any resource, tools or frameworks used in the build.
2. Code must not contain any proprietary third-party code or components.
3. Developer cannot claim any rights in perpetuity against Astro for any submitted material.
4. Based on the time given for this assignment a Candidate may attempt all 3 assignment levels, or opt to work on level 1 or 1 and 2.
  - a. Hint: you will be asked why you chose how many levels you attempted
5. Unless asked otherwise all assignment materials are to be returned within 7 days (168 hours) of receipt of this assignment; regardless on when the assignment review is to be conducted.

### **Mobile Development Assignment Level 1**

1. To display a list of Astro channels (showing at a minimum channel name and number)
  - a. Ability to sort by channel number
  - b. Ability to sort by channel name
2. To allow a user to mark a favourite channel as on-device persistent.
  - a. User launches app and tags a favourite channel
  - b. User closes app and favourite channel appears in main screen identified as a favourite

### **Mobile Development Assignment Level 2**

1. All above; plus
2. To display a 'TV guide' in a display grid (eg <http://whatson.astro.com.my/tv-guide>)
  - a. Display the current show for all channels currently airing current time
    - i. Sort by channel number or channel name is a must
    - ii. Pagination is allowed
    - iii. 'Lazy loading' is encouraged
  - c. Display must be responsive to device timezone.

### **Mobile Development Assignment Level 3**

1. All above; plus
2. On attempt by user to mark a favourite channel
  - a. Will prompt user for login to a common SSO (Google / FB)
  - b. Sorting order will include 'favourites' (along with channel number or channel name)
  - c. Favourites and sorting order are to be securely CRUD in a cloud based service (eg. Any AWS method of storage EC2, RDS, S3)
  - d. On logout, all information such as sorting order or favourite must be cleared from app.

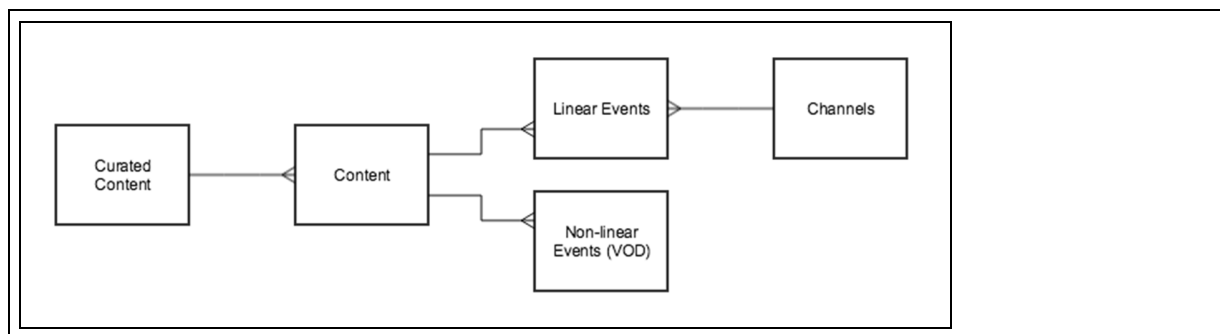
## AMS Public API Interface Design Document V3

### 1. Base URL

All API calls below have a base URL of <http://ams-api.astro.com.my/>

### 2. Interface Specifications

The entity relationships relating the API calls are as follows:



Data of each element can be accessed with the following commands:

	Curated Content	Content	Linear Events	VOD	Channels
GET	TRUE	TRUE	TRUE	TRUE	TRUE
SEARCH			TRUE	TRUE	

#### 2.1 Get Channel List

##### Description

To retrieve all Astro channels with minimal

##### Specifications

Path: /ams/v3/getChannelList

Request Method: GET

No parameters may be included as part of this API call

Response Header

Field Name	Type	Description	
HTTP code	number	HTTP code of the operation	
		resultcode	resultdescription
		200	Success.
		400	Bad request. Missing mandatory field.
		401	Unauthorized. Invalid user login.
		403	Forbidden. Invalid PartnerID and/or PartnerPassword.
		404	Endpoint URL not found
		405	HTTP method not allow
		500	Generic Server Error

#### Response Body (Array)

Field Name	Type	Description
channelId	number	Internal AMS Channel Id
channelTitle	string	The name of the channel
channelStbNumber	number	The set top box number of the channel

## 2.2 Get Channels

### Description

To retrieve all Astro channels and their related metadata

### Specifications

Path: /ams/v3/getChannels

Request Method: GET

Parameter	Type	Required	Description
channelId	array of string	no	channel Ids, e.g., 1,2,3
language	array of string	no	language ids, e.g., 1,2,3

category	array of string	no	category ids, e.g., 1,2,3
platform	array of string	no	platforms, e.g., stb, aotg

## Response Header

Field Name	Type	Description	
HTTP code	number	HTTP code of the operation	
		resultcode	resultdescription
		200	Success.
		400	Bad request. Missing mandatory field.
		401	Unauthorized. Invalid user login.
		403	Forbidden. Invalid PartnerID and/or PartnerPassword.
		404	Endpoint URL not found
		405	HTTP method not allow
		500	Generic Server Error

## Response Body (Array)

Field Name	Type	Description
channelId	number	Internal AMS linear service ID
channelTitle	string	
channelDescription	string	
channelLanguage	string	
channelColor1	string	Hexidecimal RGB color code
channelColor2	string	Hexidecimal RGB color code
channelColor3	string	Hexidecimal RGB color code
channelCategory	string	
channelStbNumber	string	
channelHD	bit	

hdSimulcastChannel	int	Defines the associated HD channel by linearServiceId	
channelStartDate	date		
channelEndDate	date		
channelExtRef	array	Field Name	Type
		system	string
		subSystem	string
		value	string
linearOttMapping	array	Field Name	Type
		platform	string

## 2.3 Get Events

### Description

Gets a list of linear events using a cut down GET method. Events shall be limited to those starting on the current date to events starting 7 days in the future. Event description information shall be in English only.

### Specifications

Path: /ams/v3/getEvents

Request Method: GET

Parameter	Type	Required	Description
channelId	array of string	yes	channel ids, e.g., 1,2,3
periodStart	string	yes	YYYY-MM-DD HH:MM
periodEnd	string	yes	YYYY-MM-DD HH:MM
premier	string	no	Returns only premier content. True / False
live	string	no	Returns only live content. True / False
highlight	string	no	Returns only premier content True/ False
channelCategory	int	no	

channelLanguage	int	no	
siTrafficKey	string	no	
programmeld	string	no	
episodeld	string	no	

#### Response Header

Field Name	Type	Description	
HTTP code	number	HTTP code of the operation	
		resultcode	resultdescription
		200	Success.
		400	Bad request. Missing mandatory field.
		401	Unauthorized. Invalid user login.
		403	Forbidden. Invalid PartnerID and/or PartnerPassword.
		404	Endpoint URL not found
		405	HTTP method not allow
		500	Generic Server Error

#### Response Body (Array)

Field Name	Type	Description
eventId	string	Internal event primary key
channelId	number	Channel Id
channelStbNumber	string	
channelHD	string	
channelTitle	string	
certification	string	
displayDateTimeUtc	datetime	UTC format of date time
displayDateTime	datetime	Format: 2016-04-26 00:00:00Z

displayDuration	string	hh:mm		
siTrafficKey	string			
programmeTitle	string	Title of the program		
programmeld	string	Programme unique key (all episodes)		
episodeld	string	episode unique key		
shortSynopsis	string			
longSynopsis				
genre	string			
subGenre	string			
live	bit			
premier	bit	Defines if the slot is the first showing of the programme		
ottBlackout	bit	True if rights are not available for the slot on linear OTT		
highlight	bit	Defines slots highlighted by users		
contentId	int	Links to show page		
epgEventImage	string	Image only applicable to the event		
contentImage	array	Field Name	Type	Description
		imageUrl	string	
		imageRole	string	
		imageCaption	string	
		imageCaptionLanguage	string	
groupKey	string	Series linking key		
vernacularData	array	Field Name	Type	
		vernacularLanguage	string	
		vernacularProgrammeTitle	string	
		vernacularLongSynopsis	string	

## 2.4 Search Events



## Description

Used to search the EPG schedule for content. Searches on Slot Name, slot description and channel name attributes.

## Specifications

Path:/ams/v3/searchEvents

Request Method: GET

Parameter	Type	Required	Description
keyword	string	no*	Search term
programKey	string	no*	Filter by programme Key
episodeKey	string	no*	Filter by episode Key
order	string	no	Defines the ordering of the results
size	number	no*	Defines the number of results to be returned. Default is 10
start	number	no*	Defines the position in the result list to return results from. Default is 0
channelCategory	number	no*	Filter results by channel category
channelLanguage	number	no*	Filter results by channel language
channelId	number	no*	Filter results by channel
genre	string	no*	Filter by Genre
subGenre	string	no*	Filter by Sub Genre

## Response Header

Field Name	Type	Description
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HTTP code	number	HTTP code of the operation	
		resultcode	resultdescription
		200	Success.
		400	Bad request. Missing mandatory field.
		401	Unauthorized. Invalid user login.
		403	Forbidden. Invalid PartnerID and/or PartnerPassword.
		404	Endpoint URL not found
		405	HTTP method not allow
		500	Generic Server Error

#### Response Body (Array)

Field Name	Type	Description
hitsFound	number	Total results found (not limited by the Size attribute)

events	array	Field Name	Type	Description		
		Id	string	Internal Search primary Key		
		Fields	array	Field Name	Type	Description
				siTrafficKey	string	Slot Primary Key
				channelTitle	string	Channel Name
				contentId	int	User to call Get Content API
				programKey	string	Programme Identifier
				episodeKey	string	Episode Identifier
				displayDateTime	date/time	Display date time of slot
				displayDateTimeEnd	string	Display end time for slot
				displayLanguage	string	Display language in ISO 2 digit code
				eventName	string	Slot Name
				eventDescription	string	EPG Synopsis
				eventExtendedDescription	string	Extended EPG Description

				genre	string	DVB Genre
				subGenre	string	DVB Sub Genre
				ErrorMessage	string	Error message if present
				IsError	bit	True if error is found

## 2.5 Get VOD

### Description

Used to retrieve a list of items available for consumption on VOD.

### Specifications

[Path:/ams/v3/getVOD](#)

Request Method: GET

Parameter	Type	Required	Description
vodEventServices	array of string	no	eg aotg,sott
packageAssetId	array of strong	no	eg PACK0000000001, PACK00000002

### Response Header

Field Name	Type	Description
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HTTP code	number	HTTP code of the operation	
		resultcode	resultdescription
		200	Success.
		400	Bad request. Missing mandatory field.
		401	Unauthorized. Invalid user login.
		403	Forbidden. Invalid PartnerID and/or PartnerPassword.
		404	Endpoint URL not found
		405	HTTP method not allow
		500	Generic Server Error

#### Response Body (Array)

Field Name	Type	Description
vodEventId	int	
nodeType	string	
packageAssetId	string	Primary key identifier for package
packageAssetName	string	Title of the package
licenseWindowStart	datetime	Package available from date
licenseWindowEnd	datetime	Package available to date
programmeClipID	string	Unique at programme level
episodeClipID	string	Unique at programme level
shortSynopsis	string	
genre	string	
subGenre	string	
certification	string	
businessModel	string	Defines the selling model (SVOD, TVOD etc)
providerContentTier	string	Defines the subscription model - (available subscriptions)
viewingLength	string	

originalLanguage	string	The language the content was originally produced in		
hdContent	bit			
contentId	int	Links to show page		
groupTitles	Array	Field Name	Type	Description
		groupTitle	string	The pack ID parent
previews	Array	Field Name	Type	Description
		preview	string	The asset Id of the preview
vodEventCategories	Array	Field Name	Type	Description
		category	string	Defines the categories of the package - used to drive how packages are displayed on store front
vodEventServices	Array	Field Name	Type	Description
		name	string	Defines where the package is available (set top box, mobile app etc).
vodImages	string	URL for VOD Image		

## 2.6 Search VOD

### Description

Used to search the VOD library. Searches on Slot Name, slot description and channel name attributes.

### Specifications

[Path:/ams/v3/search](#)VOD

Request Method: GET

Parameter	Type	Required	Description
keyword	string	yes	Search term

size	number	no	Defines the number of results to be returned. Default is 1000
start	number	no	Defines the position in the result list to return results from. Default is 0
service	number	no	Filter results by channel
genre	string	no	Filter by Genre
subGenre	string	no	Filter by Sub Genre
nodeType	array string	no	Filters based on node type

#### Response Header

Field Name	Type	Description	
HTTP code	number	HTTP code of the operation	
		resultcode	resultdescription
		200	Success.
		400	Bad request. Missing mandatory field.
		401	Unauthorized. Invalid user login.
		403	Forbidden. Invalid PartnerID and/or PartnerPassword.
		404	Endpoint URL not found
		405	HTTP method not allow
		500	Generic Server Error

#### Response Body (Array)

Field Name	Type	Description
hitsFound	number	Total results found (not limited by the Size attribute)

events	array	Field Name	Type	Description				
		Id	string	Internal Search primary Key				
		Fields	array	Field Name	Type	Description		
				contentId	int			
				licenseWindow Start	datetime			
				licenseWindow End	datetime			
				shortSynopsis	string			
				genre	string			
				subGenre	string			
				certification	string			
				groupTitles	array	Field Name	Type	Description
						groupTitle	string	
				hdContent	bit			
				packageAssetId	string			
				packageAssetName	string			
				viewingLength	string			
				businessModel	int			
programmeClipID	string							
episodeClipID	string							
vodEventServices	array	Field Name	Type	Description				





## Response Body (Array)

Field Name	Type	Description				
contentId	int					
episodic	bit	Defines one or episodeic content				
yearOfRelease	int					
endYear	int	The year the content ceased production (applicable to episodic only)				
countryOfOrigin	string					
originalLanguage	string					
originalRuntime	int	In minutes				
certification	string	U, PG-13 or 18				
contentEpisode	Array	Defines episodes associated (episodic only)				
		Field Name	Type	Description		
		episodeId	int			
		systemTitle	string			
		episodeNumber	string			
		seasonNumber	string			
		episodeAstroReferences	array	Field Name	Type	Description
				episodeAstroReference	string	

contentTitle	Array	<table><tr><td>Field Name</td><td>Type</td><td colspan="3">Description</td></tr><tr><td>titleType</td><td>string</td><td colspan="3"></td></tr><tr><td>title</td><td>string</td><td colspan="3"></td></tr><tr><td>titleLanguage</td><td>string</td><td colspan="3"></td></tr></table>	Field Name	Type	Description			titleType	string				title	string				titleLanguage	string																
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contentGenre	Array	<table><tr><td>Field Name</td><td>Type</td><td colspan="3">Description</td></tr><tr><td>genreType</td><td>string</td><td colspan="3"></td></tr><tr><td>genre</td><td>string</td><td colspan="3"></td></tr><tr><td>subgenre</td><td>string</td><td colspan="3"></td></tr></table>	Field Name	Type	Description			genreType	string				genre	string				subgenre	string																
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subgenre	string																																		
contentTalent	Array	<table><tr><td colspan="2">Field Name</td><td>Type</td><td colspan="3">Description</td></tr><tr><td colspan="2">talentType</td><td>string</td><td colspan="3"></td></tr><tr><td colspan="2">talentName</td><td>string</td><td colspan="3"></td></tr><tr><td colspan="2">talentLanguage</td><td>string</td><td colspan="3"></td></tr><tr><td colspan="2">billingOrder</td><td>int</td><td colspan="3"></td></tr></table>	Field Name		Type	Description			talentType		string				talentName		string				talentLanguage		string				billingOrder		int						
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		talentLanguage		string																															
billingOrder		int																																	
contentKeyword	Array	<table><tr><td colspan="2">Field Name</td><td>Type</td><td colspan="3">Description</td></tr><tr><td colspan="2">keywordType</td><td>string</td><td colspan="3"></td></tr><tr><td colspan="2">keyword</td><td>string</td><td colspan="3"></td></tr><tr><td colspan="2">keywordLanguage</td><td>string</td><td colspan="3"></td></tr></table>	Field Name		Type	Description			keywordType		string				keyword		string				keywordLanguage		string												
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		keyword		string																															
keywordLanguage		string																																	

contentImage	Array	Field Name	Type	Description
		imageUrl	string	
		imageRole	string	
		imageCaption	string	
		imageCaptionLanguage	string	
contentVideo	Array	Field Name	Type	Description
		videoPlatform	string	
		videoType	string	
		videoid	string	
contentExtRef	Array	Field Name	Type	Description
		externalSystem	string	
		externalSubsystem	string	
		externalId	string	
scheduleImages	Array	Field Name	Type	Description
		size	string	Large (640x390) or small (315x192)
		orientation	string	Today only landscape in use
		url	string	
linearEvents	Array	Applicable events will be listed in this sub array. See Get Event API for array structure		
nonLinearEvents	Array	Applicable VOD events will be listed in this sub array. See Get VOD API for array structure		

## 2.8 Get Bucket List

Parameter	Type	Required	Description
tags	string	no	Will return results with a wildcard selector at the end of the string. EG: avm:landing%

Description

To retrieve all curated content buckets

## Specifications

Path: /ams/v3/getBucketList

Request Method: GET

No parameters may be included as part of this API call

## Response Header

Field Name	Type	Description	
HTTP code	number	HTTP code of the operation	
		resultcode	resultdescription
		200	Success.
		400	Bad request. Missing mandatory field.
		401	Unauthorized. Invalid user login.
		403	Forbidden. Invalid PartnerID and/or PartnerPassword.
		404	Endpoint URL not found
		405	HTTP method not allow
		500	Generic Server Error

## Response Body (Array)

Field Name	Type	Description
curatedContentId	number	Internal AMS Id
title	string	The name of the bucket
tag	string	The bucket tag

## 2.9 Get Curated Content

### Description

To retrieve currated content buckets

## Specifications

Path: /ams/v3/epg/getCuratedContentLite

Request Method: GET

Parameter	Type	Required	Description
curatedContentId	int	no	

## Response Header

Field Name	Type	Description	
HTTP code	number	HTTP code of the operation	
		resultcode	resultdescription
		200	Success.
		400	Bad request. Missing mandatory field.
		401	Unauthorized. Invalid user login.
		403	Forbidden. Invalid PartnerID and/or PartnerPassword.
		404	Endpoint URL not found
		405	HTTP method not allow
		500	Generic Server Error

## Response Body (Array)

Field Name	Type	Description
curatedContentId	int	
tags	string	Tags separated by : eg: avm:landing:international
bucketTitle	string	
bucketDescription	string	
content	Array	Applicable content records will be listed in this sub array. See Get Content API for array structure

