

Navigation & FM Tuner APIs

@W3C Automotive and Web Platform
Business Group

HTML5 Framework,
Web Application,
Services

OBIGO

Navigation API

Background

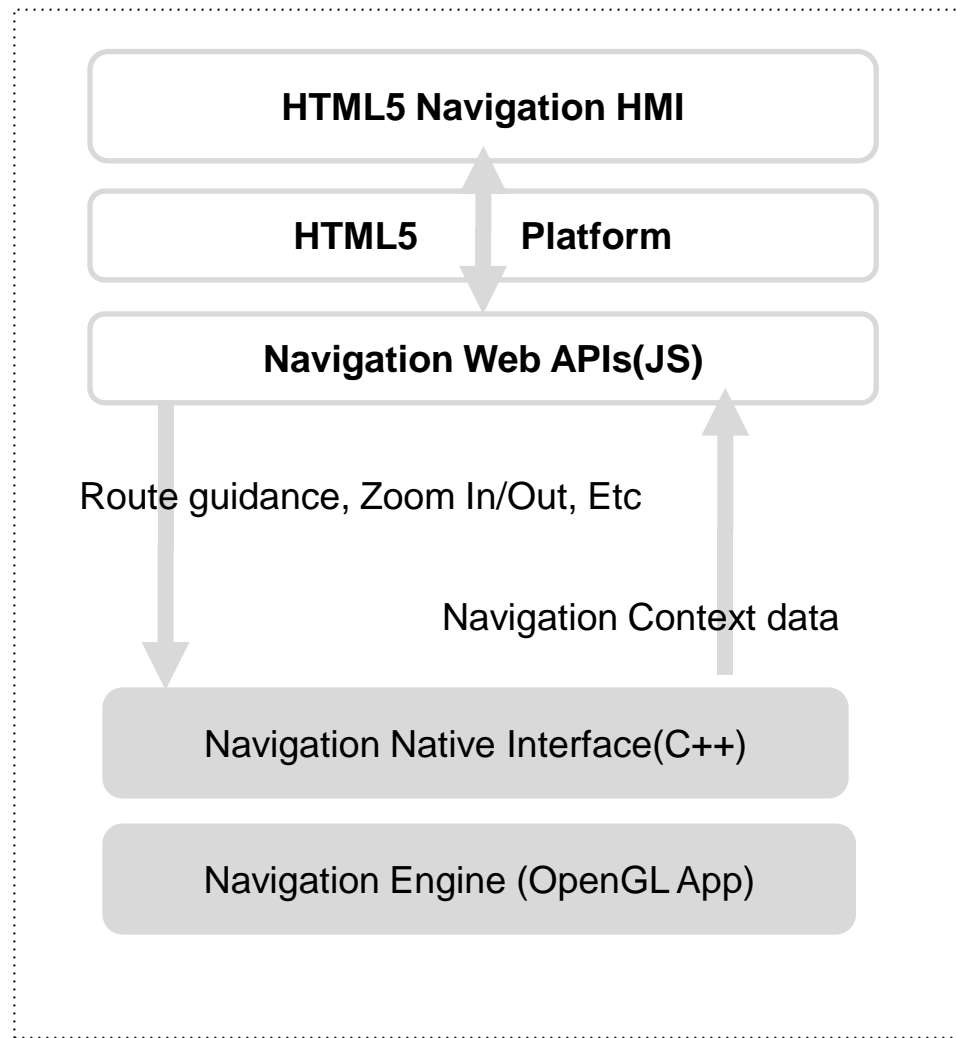
- Obigo has completed a Proof-Of-Concept project with a Navigation vendor in late 2013.
 - HTML5 HMI using Obigo browser
 - API specification and test cases
- The main purpose of this PoC project was to verify how far HTML5 could implement Navigation HMI in terms of performance and functionalities.
- [Demo Video Link](#)

Architecture

**HTML5 Navi HMI :
Overlaid transparent window**



**Map Engine :
Underlying window**



Interfaces of Navigation API

- `get(eventtype, handler, errorCallback);`
- `set(eventtype, data, successCB, errorCallback);`
- `query(eventtype, data, handler, errorCallback);`
- `addEventListener(type, listener, useCapture);`
- `removeEventListener(type, listener, useCapture);`

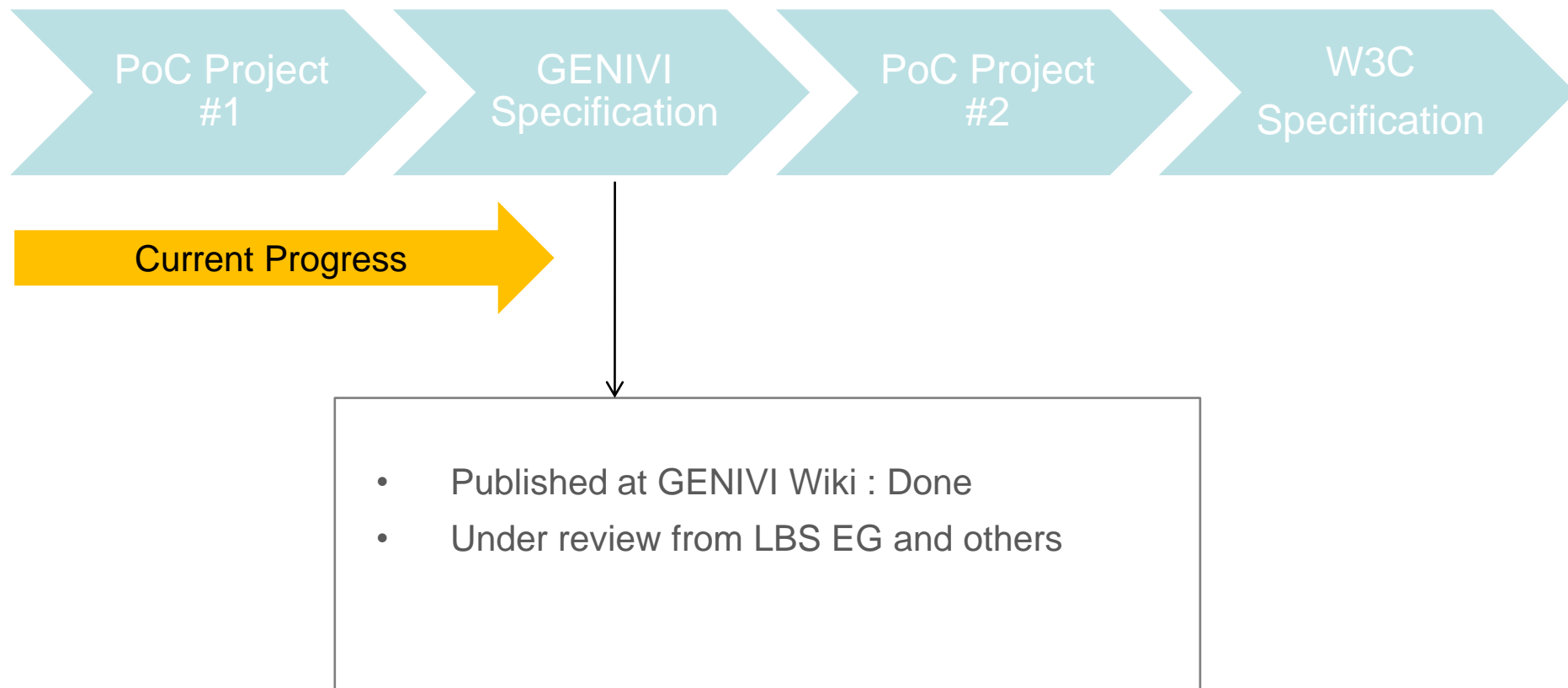
Overview of Navigation API

Category	Event Type	Method
address	navi_address_country_list	query
	navi_address_state_list	query
	navi_address_city_list	query
	navi_address_street_list	query
	navi_address_house_list	query
	navi_address_list_select	set
	navi_address_destination	listener
Guidance	navi_guidance_mode	set
	navi_guidance_info	addEventListener removeEventListener
	navi_guidance_turn_list	get
Map	navi_map_show	set
	navi_map_position	addEventListener removeEventListener
	navi_map_touch	set
	navi_map_move	set
	navi_map_pick_position_info	get
	navi_map_move_tocurrent	set
	navi_map_layout_properties	get
	navi_map_guidance_properies	get
	navi_map_units_properies	get
	navi_map_zoom_level	set
navi_map_layout_mapview	Set	

Overview of Navigation API

Category	Event Type	Method
Map	navi_map_layout_autozoom	set
	navi_map_layout_currentscreeetlabel	set
	navi_map_layout_tmcincidents	set
	navi_map_layout_speedandflow	set
	navi_map_layout_3dcitymodels	set
	navi_map_layout_3dlandmarks	set
	navi_map_layout_digitalterrainmodel	Set
	navi_map_guidance_playprompts	set
	navi_map_guidance_promptvolume	set
	navi_map_guidance_lanerecommendation	set
	navi_map_guidance_junctionview	set
	navi_map_units_distances	set
	navi_map_units_GPS	set
	navi_map_units_language	set
navi_map_distanceinfofromcurrent	query	
POI	navi_poi_category_list	get
	navi_poi_search_list	query
	navi_poi_items_list	query
	navi_poi_search_area	get/set
Route	navi_route_calculation	addEventListener removeEventListener
	navi_route_list	get
	navi_route_new	set
	navi_route_cancel	set
	navi_route_properties	get
	navi_route_options	set
	navi_route_avoidancetypes	set
navi_route_alternatives	set	
ERROR	NaviError	

Status and Plan

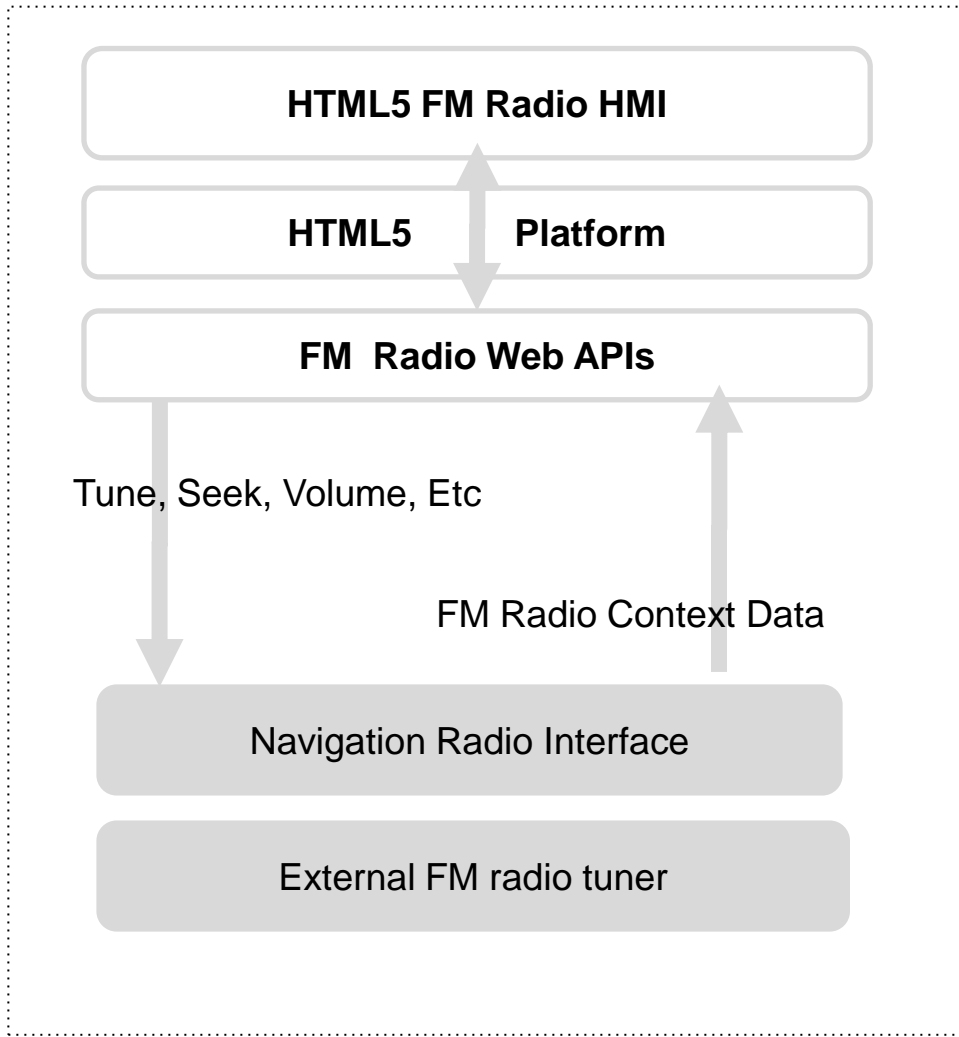
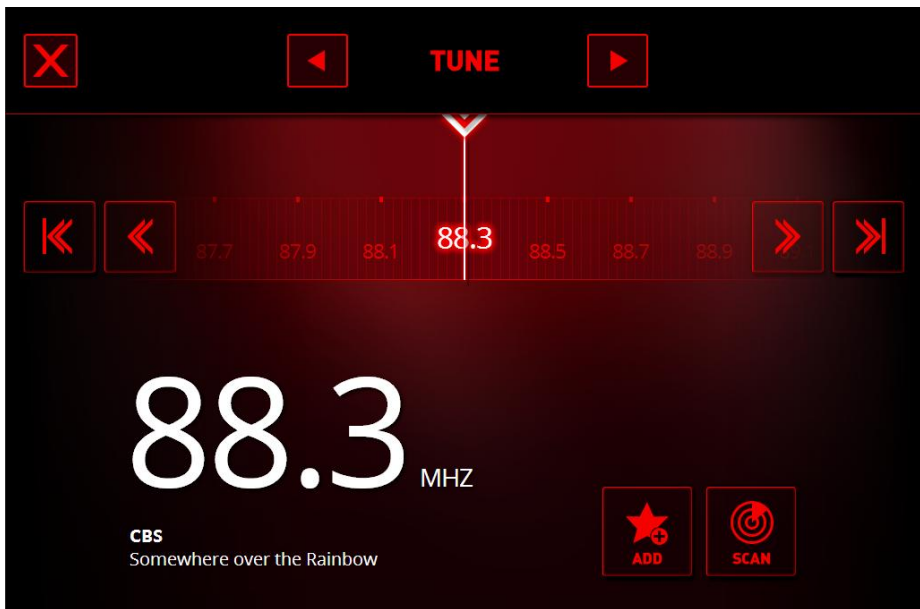


FM Radio Tuner API

Background

- Obigo has completed a Proof-Of-Concept project with an automaker in mid 2013
 - HTML5 app using Obigo browser
 - API specification and test cases
- The main purpose of this PoC project was to verify how far HTML5 could achieve performance and functionalities of FM radio tuner.
- [Demo Video Link](#)

Architecture



Interfaces of FM Radio API

- `get(eventtype, handler, errorCallback);`
- `set(eventtype, data, successCB, errorCallback);`
- `addEventListener(type, listener, useCapture);`
- `removeEventListener(type, listener, useCapture);`

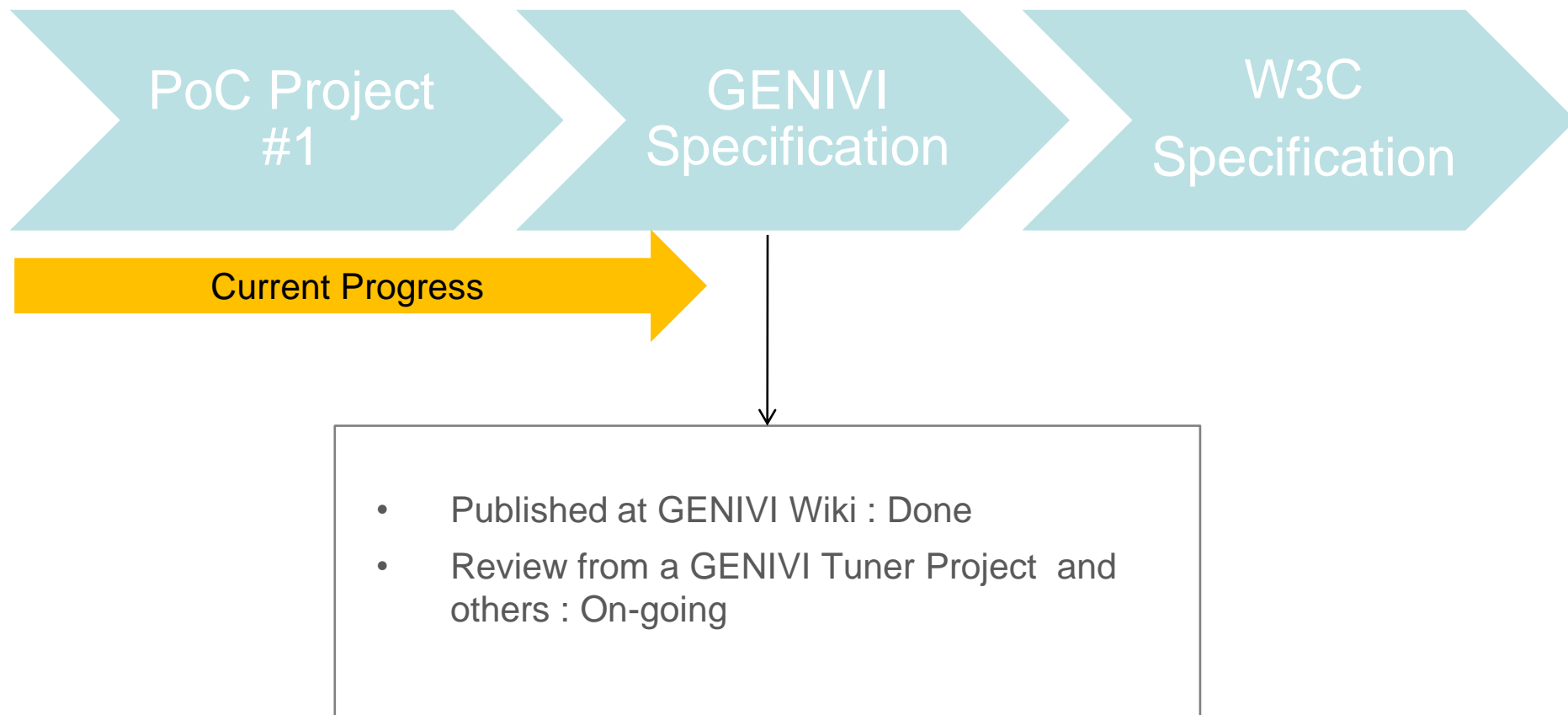
Overview of FM Radio API

Category	Event Type	Method
frequency	radio_frequency	get
		set
	radio_frequency_min	get
	radio_frequency_max	get
preset	radio_presetlist	get
		set
scanning	radio_scanningstatus	get
		addEventListener
		removeEventListener
	radio_scanningfinish	addEventListener removeEventListener
radio_scanning	set	
seek	radio_seekup	set
	radio_seekdown	set
	radio_seekfinish	addEventListener removeEventListener
	radio_seekstatus	addEventListener removeEventListener
RDS	radio_rdsmessage_broadcasting_station	addEventListener removeEventListener
	radio_rdsmessage_broadcasting_description	addEventListener removeEventListener

Overview of FM Radio API

Category	Event Type	Method
Station	radio_categorylist	get
	radio_category	set
	radio_stationlist	get
	radio_categorylistrefresh	set
	radio_refreshstatus	addEventListener removeEventListener
	radio_refreshfinish	addEventListener removeEventListener
Sound setting	radio_soundeq	get
	radio_soundeq_treble	get
	radio_soundeq_mid	set
	radio_soundeq_bass	
	radio_soundpan	get
	radio_soundpan_frontrear	get
radio_soundpan_leftright	set	
play	start	
	stop	
information	radio_various_information	get

Status and Plan



Summary

From the past PoC projects, HTML5 and Web APIs were proven to become solutions for automotive use cases. Regarding performance or functionalities, HTML5 could reach to nearly same level of native implementations.

HTML5 and Javascript requires more memory and CPU resources . It requires higher HW profiles : Dual core 1GHz or higher.

Well -defined JS APIs matter, but most of performance bottle necks were found in underlying native SWs.



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