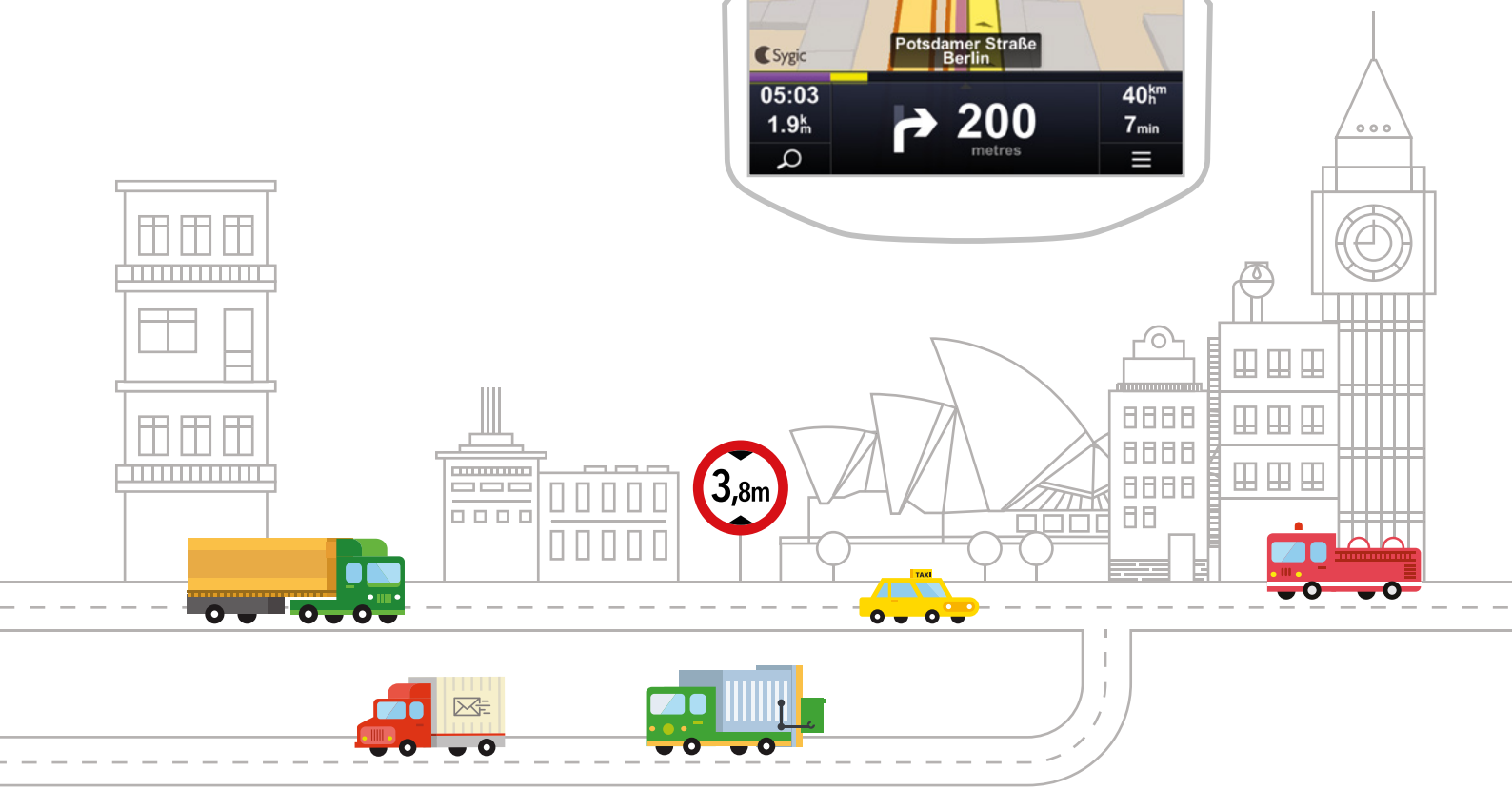
Sygic | Business Solutions

SOFTWARE DEVELOPMENT KIT

for Sygic Professional Navigation

- Over 60 easy-to-use API functions for customized solutions
- Comfortable integration into fleet management solutions
- Compatible with all major operating systems *(Windows, Android and Linux)*
- Development in various programming languages and tools
- Fast and high quality SDK support



SYGIC BUSINESS SOLUTIONS

WE DEVELOP THE WORLD'S MOST INSTALLED AND MOST ADVANCED OFFLINE NAVIGATION APP.

Sygic Business Solutions focuses on developing Professional Navigation with SDK and other solutions for B2B customers in fields of transportation, logistics, parcel delivery, automotive, utilities, emergency and municipal services.

130 M +

consumer downloads.
5 million added each month.

110 +

countries around the world.

1500 +

fleets.

250 K +

professional drivers are using Sygic Professional Navigation every day.

#1

publisher on Google Play and iOS by Revenue in the Navigation category.

150

employees.

System Integrators

Sygic Professional Navigation can add value to your fleet or transport management solution with minimum effort. SDK APIs, event call-backs and customizable configuration files help meet the specific requirements of various fleets.

Resources for developers

Detailed information on how to develop a mobile fleet application using the Sygic Navigation SDK can be found on Sygic Developer's Page:

developers.sygic.com

INTEGRATION OPTIONS FOR SYGIC PROFESSIONAL NAVIGATION

Stand-alone integration
The navigation may run as a separate application, but is still fully controlled by the integrator's application. As needed, the navigation screen can be "hidden" by the application *(allowing the driver to access other instructions as he reaches his destination)* or brought on top *(to navigate the driver to the next waypoint)*. **This method benefits from full online functionality, including automatic activation and updates.**

Embedded integration
In complex systems, where it is required, the navigation can be a part of the integrator's application, taking up only a portion of the screen. Sygic Professional Navigation may run in embedded mode inside an application both in Windows and Android operating systems. **With this method, integrators benefit from full ownership of the navigation as a component, but handle the activation, updates and application management.**

Integration using Side-bar
Through the sidebar display component, you **can share your information or provide a dedicated user interaction on the navigation screen.**

The sidebar can freely be constructed from a set of predefined and configurable widgets. Your application can control the widgets in the navigation via Sidebar API library functions and classes. The Sidebar library delivers the function calls to Sygic Navigation via AIDL and receives callbacks in the opposite direction.

FUNCTIONS	FUNCIONALITY
sidebar.Sidebar	Turns on the sidebar.
sidebar.api.TextWidget	Displays a widget with formatted text.
sidebar.api.ButtonWidget	Displays a widget with one or two buttons with defined text and color.
sidebar.api.ImageWidget	Displays a widget with given PNG file.
sidebar.api.NavigationWidget	Moves the navigation instruction pane from bottom of the screen to the sidebar.
sidebar.api.OnSidebarActionListener	Returns the callback when user clicks on elements in sidebar.

Integration with HUD
It is possible to integrate the navigation to display instructions on dashboard units or external HUD displays. The HUD API shows the following from the navigation:

- **Shape of the next turn**
- **Distance to next turn**
- **Distance to destination**
- **ETA**
- **Current speed limit**
- **Traffic delays on route**
- **Speeding**
- **Current street**
- **Next street**
- **Lane information**

CUSTOM-URL INTEGRATION

Custom-URL is a light-weight type of integration usually used when other integration methods are not possible or needed. This method of integration does not offer events and callbacks, but still provides some functions to manage navigation remotely, to control the activation process or to update installation:

FUNCTIONS	FUNCIONALITY
activate | productCode	Activates license using a product code.
login | username | password	Activates license using an user login.
update | map	Initiates map update of selected maps.
restore	Restores licenses on that device.
truckSettings | parameters	Configures truck parameters.
address | country or country ISO code | city | postal | street | house number | show	Shows an address on map.
address | country or country ISO code | city | postal | street | house number |drive	Initiates navigation to an address.
address | country or country ISO code | city | postal | street | house number | walk	Initiates navigation to an address in walking mode.
coordinate | lon | lat | show	Shows map on given coordinates.
coordinate | lon | lat | drive	Initiates navigation to an address.
coordinate | lon | lat | walk	Initiates navigation to an address in walking mode.
mysygic	Shows Sygic's products shop.
mysygicproduct | productId	Shows product details from shop.
mysygicbuy | productId	Buys a license for a product.
gpslog | nmeafile	Plays gps nmea log from Res/gpslogs.
geo:	Standard support for visualisation of geo location on map.

GENERAL API FUNCTIONS AND CALLS

As needed, the navigation screen can be "hidden" by the application *(allowing the driver to access other instructions as he reaches his destination)* or brought on top *(to navigate the driver to the next waypoint).* Sygic Professional Navigation offers mass activation and remote activation of the licenses on multiple devices — saving a lot of effort in the system deployment process. It is also possible to manage configuration of the navigation remotely and check the version of installed software and maps.

FUNCTIONS	FUNCIONALITY
InitAPI	This function initializes ApplicationAPI and must be called at the beginning.
BringApplicationToBackground	This function brings the navigation window to background. The application is hidden and stops doing any graphic operations which results in less processor load. However, it continues to read GPS.
BringApplicationToForeground	This function brings the navigation window to foreground. For Android, use the standard Intent function instead.
IsApplicationInForeground	This function returns, if the application is active in foreground or idle in background.
IsApplicationRunning	This function verifies whether Sygic Navigation is running.
GpsSwitchOn	This function turns Sygic Navigation GPS module ON or OFF.
GetApplicationVersion	This function gets the Navigation software's version and build number.
GetUniqueDeviceId	This function returns device ID and enables remote activation.
EndApplication	This function ends the Sygic Navigation application. For Windows operating systems CloseAPI functions must be called before EndApplication. The CloseAPI function deactivates ApplicationAPI. No other API functions will be executed after this command.

EVENTS

EVENT_APP_STARTED	Event occurs when the application starts.
EVENT_APP_ERROR	Event occurs when SDK communication channel was terminated unexpectedly.
EVENT_APP_EXIT	Event occurs when the application was closed by user.
EVENT_APP_CLOSED	Event occurs when the application is terminated by EndApplication function.
EVENT_CONTEXT_MENU	Event occurs when the user shows the context menu located at the bottom of the navigation screen.
EVENT_EXIT_MENU	Event occurs when the user returns from menu to navigation screen.
EVENT_MAIN_MENU	Event occurs when the user clicks on the navigation window.

SENDING JOBS TO DRIVERS FROM APPLICATION TO NAVIGATION

While using Sygic SDK for professional navigation, drivers can be automatically navigated to a single destination, series of stops, or exact route.

The route can be planned in advance and new waypoints can be added to the existing itinerary any time. The driver can see the entire route with ETAs for each stop.

The exact route function helps route planning for fleets, where drivers have to follow the same route repeatedly or must follow an exact route sent by a dispatcher.

FUNCTIONS	FUNCIONALITY
StartNavigation	This function starts navigation to a given location *(GPS coordinates)*. For navigation with an itinerary, see function SetRoute.
StopNavigation	This function stops navigation, cancels the route and returns the application to the main screen.
LocationFromAddressEx	This function returns direct geocoding, i.e. location GPS coordinates corresponding to the given address.
GetAddressList	This function returns a list of addresses matching a given name-substring for specific country.
GetActualGpsPosition	This function returns information about the actual GPS position.
GetCurrentSpeedLimit	This function returns current road speed limit.
GetLocationInfo	This function returns info about the state, city, street, speed limit, type of road *(highway, tunnel, toll road, etc.)* and road surface.
GetRouteInfo	This function returns the ETA and distance information about the computed route.
AddItinerary	This function creates an itinerary and fills it with given waypoints.
AddEntryToItinerary	This function adds a new waypoint to the itinerary.
DeleteItinerary	This function deletes the itinerary.
DeleteEntryInItinerar	This function deletes a specific waypoint from the itinerary.
GetItineraryList	This function returns a list of all waypoints in the itinerary.
SetRoute	This function starts navigation based on a specific itinerary defined by the AddItinerary function or defined by a given SIF file.
SkipNextWaypoint	This function skips the next waypoint.

EVENTS	
EVENT_ROUTE_COMPUTED	Event occurs when a new route is computed.
EVENT_ROUTE_FINISH	Event occurs when the user reaches route destination.

EVENTS	FUNCIONALITY
EVENT_ROUTE_RECOMPUTE	Event occurs when a route is recomputed.
EVENT_ROUTE_USERCANCEL	Event occurs when the user cancels the route.
EVENT_WAIPOINT_VISITED	Event occurs when a waypoint is visited.
EVENT_INVISIBLE_WAYPOINT_VISITED	Event occurs when an invisible waypoint is visited. The strData parameter will return the waypoint ID.
EVENT_ITINERARY_CHANGED	Event occurs when the itinerary is changed such as the address of a waypoint, or the itinerary sequence.
EVENT_ITINERARY_WARNING	Event occurs when the time window of the waypoint is expected to be violated.
EVENT_OPTIMIZATION_FINISHED	Event occurs when optimization is finished.

AUTOMATIC AVOIDANCE OF ROADS UNSUITABLE FOR TRUCKS, CARGOS OR HAZARDOUS MATERIALS

Sygic SDK for Professional Navigation enables the setting of the vehicle dimensions and truck-related road attributes in order to avoid roads that are forbidden for specific trucks or cargos.

FUNCTIONS	FUNCIONALITY
ChangeApplicationOptions	This function changes basic vehicle and route settings.

EVENTS	
EVENT_CHANGE_LANGUAGE	Event occurs when the user changes language of the application.

Related parameters to be set

Vehicle:
- Use Truck Attributes
- Weight Total
- Weight Axle
- Length
- Width
- Height
- Hazardous material restriction

Route:
- Urban Penalize *(set the preference to use highways instead of city streets)*
- Urban Penalize Truck
- Crossing Penalize Truck
- Crossing Penalize *(set the preference to avoid crossings)*
- Invisible Point Reach
- Compute Unpaved Roads *(allow offroad driving)*
- Not Compute Ferries *(prohibit ferries)*

COMMUNICATE WITH DRIVERS DIRECTLY VIA NAVIGATION

Sygic API supports calls, which enable flash messages to be sent to the navigation screen, convert text messages to speech, and display important messages that a driver is able to confirm by having them read.

It is possible to display certain information to a driver and show him the place on the map connected with this information.

FUNCTIONS	FUNCIONALITY
PlaySoundTTS	Uses the TTS engine, if installed, to speak the given text message.
FlashMessage	This function shows flashing text message in upper right corner of the map.
ShowMessage	This function shows a dialog *(message box)* with a specified text and YES/NO buttons *(the function returns the user input)* or just an OK button for confirmation.
ShowCoordinatesOnMap	This function shows given location as a pin on the map.
ShowRectangleOnMap	This function shows a specific area of a map defined by the X and Y coordinates of a rectangle.

TRAFFIC EVENTS

Traffic markers help to save time and show the situation on the road ahead. The driver is notified about traffic jams, accidents, etc. along the route. Traffic service is available only when the application is online.

Custom traffic events can also be added into the application to inform drivers about traffic jams, accidents and road closures.

FUNCTIONS	FUNCIONALITY
AddTMCEvent	Adds a custom TMC traffic event. This event is independent of the events received online. *(this API function is not available for the 3D version of Sygic Professional Navigation software)*
ClearTMCTable	Erases all the custom TMC traffic events defined with the AddTMCEvent function. *(this API function is not available for the 3D version of Sygic Professional Navigation software)*
GoOnline	Turns online traffic services on or off. Login using OnlineServicesLogin function is required. 3D navigation has the online traffic services always turned on.
OnlineServicesLogin	Enters login credentials for online traffic services. 3D navigation uses Custom URL to call and login to online services.

EVENTS	FUNCIONALITY
EVENT_RADAR_WARNING	Event occurs when a radar warning is invoked.
EVENT_RESTRICTED_ROAD	Event occurs when a restricted road interference is invoked.
EVENT_SPEED_EXCEEDING	Event occurs when the speed limit is exceeded.
EVENT_BORDER_CROSSING	Event occurs when the border is crossed.
EVENT_NEXT_INSTRUCTION	Event occurs when navigation displays the next instruction.

POINTS OF INTEREST

POI *(Point of Interest)* indicates an important point *(location)* on the map. For example, a warehouse, rest stop station, mechanic workshop, hotel, etc. It is possible to add custom POIs, search for POIs or get navigated to POIs.

FUNCTIONS	FUNCIONALITY
AddPoi	This function adds a POI to custom category.
AddPoiCategory	This function adds a custom POI category.
DeletePoi	This function deletes a POI from a custom category.
DeletePoiCategory	This function deletes a custom POI category.
MakeUserPoiVisible	Set whether custom POI should be visible on the map or not.
GetPoiList	This function returns a list of POIs from a selected category.
FindNearbyPoi	This function returns the nearest POI around a given position and from a selected category.
SetPoiWarning	This function sets the POI warning *(visual and acoustic)* for a specified category.
GetPoiCategoryList	This function returns the list of POI categories.
GetPoiOnRoute	This function returns the list of POIs on the computed route.
HighlightPoi	This function temporary highlights the POI. *(this API function is not available for 3D version of Sygic Professional Navigation software)*

EVENTS	
EVENT_POI_CLICK	Event occurs when the user clicks on POI in browsemap.
EVENT_POI_WARNING	Event occurs when a POI warning is invoked.

GEO FUNCTIONS

Using Sygic Professional GPS Navigation SDK, solution providers can maximize driver work efficiency by adding work related visual content to existing maps.

The **Geometry File** ***(GF)*** enables the drawing of custom lines on the map such as pipelines, power lines, or networks. The lines can vary in color, width and transparency.

Geofence RAD file enables dispatchers to define specific areas that enforce certain behavior from drivers *(avoid area, reduce speed, drive cautiously)*. The dispatcher receives messages when drivers enter or leave those areas or when they exceed the custom set speed limit.

Route JSON file supports route planning for fleets, where drivers have to follow the same route repeatedly or must follow exact routes sent by a dispatcher.

Icons/Pictures in the map may provide visual help to drivers. For example, it can be used by firemen to visualize hydrant locations.

FUNCTIONS	FUNCIONALITY
LoadExternalFile	This function loads external GF, RAD or TMC data files *(defining polylines, geofences or traffic info)* and draws GF data in the navigation and browse map.
UnloadExternalFile	This function unloads external GF, RAD or TMC and drawn overlay data from the map.
LoadComputedRoute	This function loads a guided route from a JSON file and starts navigation following that route.

Geo functions are not available for the 3D version of Sygic Professional Navigation software.

WORKMATE API

Workmate API can be used to **visualize other members of the fleet on the navigation screen** to simplify coordination and communication between them. The integrator's app monitors positions of fleet members, and passes the information to the navigation to show the given icons at these positions.

The Workmate API actually assumes the external system *(typically partners' database system)* maintains the positioning of workmates, while it synchronizes the state with Sygic navigation over Workmate API to individual devices.

FUNCTIONS	FUNCIONALITY
InsertWorkmate	Places a new workmate icon at a given position.
UpdateWorkmate	Moves workmate icon to another position.
DeleteWorkmate	Removes the workmate icon.

“Deliver my thanks to the API developers for the easy and quick use of C# API DLLs.”

Tomi Nousiainen, STD Systems Oy

“Thanks to the well-documented Sygic SDK and wide hardware compatibility, Sygic Taxi Navigation was so easy to embed into the project that there was almost no need to get support.”

Burak Türker, R&D Engineer, Tetas Electronics

“Sygic has been the first choice for the Vehco Group in recent years.”

Ted Berggren, Vehicle communications, Vehco

“We have conducted very comprehensive research in the market and found out that Sygic Truck Navigation was the best, and remains the best, navigation system for trucks and for normal cars in the market.”

Andreas Kirchheiner, Managing Director, AIS GmbH

INTEGRATING PARTNERS

CONTACTS

Sygic Headquarters
Karadžičova 14
821 08 Bratislava
Slovak Republic

Sygic U.S. Office
28 2nd street
San Francisco, CA 941 05
ph. +1 (415) 515-5057

Sygic Sales Agency (China)
Rm 1501, 2-2 Tian Yu Xiang Shan
Futian District, Shenzhen 518000
Ph. +86-13902958292