

The background of the slide is a close-up, slightly blurred photograph of a printed circuit board (PCB). The board is populated with various electronic components, including integrated circuits and surface-mount devices. The lighting is soft, highlighting the textures of the board and the components. The overall color palette is muted, with blues, greys, and browns.

■ AddOn interface in  
ATDI RF tools

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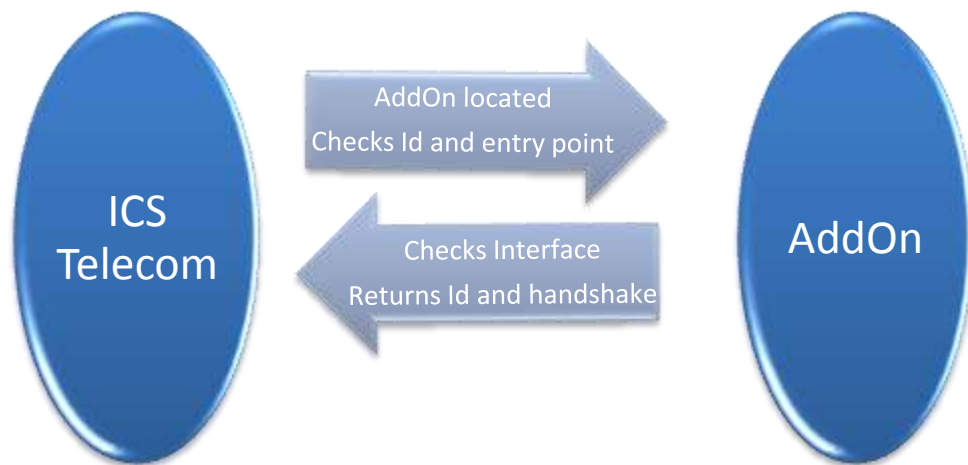


## Abstract

ICS Telecom and its government extension HTZ warfare exchange information back and forth with other software application. The oldest mechanism implemented was the addition of external propagation models. Presently, more than 20 external propagation models have been developed and used with the platform, some of them are part of the default installation package. Other developments for specific requirements of the interfaces which include file exchange, database sharing, network (IP) interactions, interface with other modules like DLLs or standalone applications. Today, ATDI opened its interface further to allow users and third party developers to create their own 'Apps', called AddOns, and leverage the power of the RF Platforms to meet their own specific requirements.

## AddOns in ICS Telecom

AddOns in ICS Telecom are external computer modules that can be called from the standard interface and supplement the capabilities of the platform. Practically speaking, they are simple Dynamic-Link Libraries (DLLs), developed in any programming language, and located in the special AddOns directory. They are recognized in real-time by ICS Telecom and appear in the AddOns submenu.



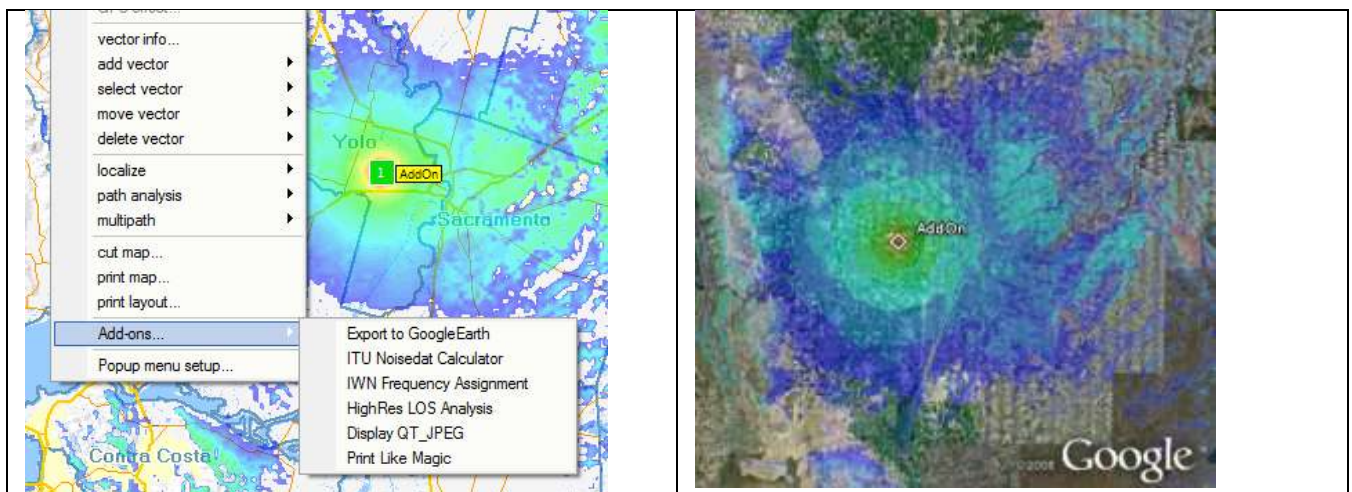
Usually, DLLs are designed to host independent capabilities called by the main process. AddOns extend this behavior by being able to request the main process to run a number of required interface functions, like a Software Development Kit (SDK).



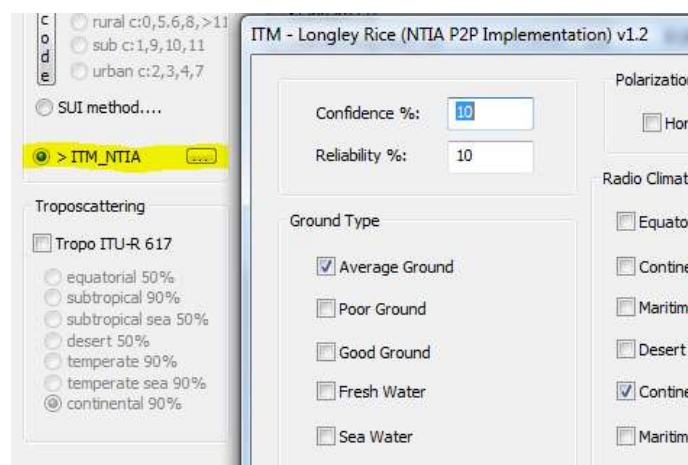
## Typical AddOn capabilities

Customized and batch printing are typical candidates for AddOns. Although ICS Telecom offers an impressive set of printing capabilities, it is sometimes necessary to mimic existing forms and reports, or customize an output in order to gain efficiency. The AddOn can request and obtain the site and station information, even the terrain profiles between locations and calculated link parameters and print the information as needed.

Exports to third party applications can be implemented as AddOns. ICS Telecom 'Export to Google Earth' capability is an AddOn that requests ICS Telecom to prepare the coverage output for export, the locations and the callsign of the active stations. The information is then packaged as a classic KML dataset and the application opened automatically.



Calculators for link budgets, environmental noise, antenna efficiency, unit conversions are easy to add to the standard interface. Again, external propagation models have been available for a long time and the programming interface well described in the current software documentation:



Longley-Rice Model as external model



A special VHF trunking frequency assignment module was also recently developed as an AddOn in order to optimize scenario analysis and frequency distribution.

### Running ICS Telecom functions

ICS Telecom exports a library of functions that constitutes its open interface, of SDK. Some of them are briefly described here:

GetStationCount	returns the number of stations currently in the network
GetStationParam	returns a given station parameter
SetStationParam	sets a given station parameter
GetMicrowaveCount	returns the number of MW links currently in the network
GetMicrowaveParam	returns a given MW node parameter
CalculateMWProfile	calculate a link budget and returns values and profile
GetDisplayMapArea	returns the display parameters that allow the AddOn to take control of the
SaveResultAsFLD	Exports the current analysis to raster FLD
GetDisplayMapArea	returns the display parameters that allow the AddOn to take control of the

The handshake between ICS Telecom and the AddOn is limited to two functions: GetAddOnName and the entry point RunAddOn.

### Conclusion

An average of one new AddOn per month is created currently. The interface allows quick development of capabilities or prototypes that can either be incorporated in the release, supplied as additional modules, or dedicated to specific user needs. The SDK sits on a very solid C/C++ foundation that allows ATDI to create and export more interface functions as required.

For further information visit:  
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