PROCITEC®

go2SIGNALS
PROCITEC® SOFTWARE

RELEASE NEWS Ver. 19.2

Innovations in Detail

With over 50 features & enhancements, version 19.2 of our go2MONITOR and go2DECODE software is more powerful and easier to use than ever! Through innovative features, you can start with go2SIGNALS software as your monitoring, decoding and analysis processes require it.

Interested in an update ?
Please contact sales@procitec.com
for more information.

New Operating Modes with Narrowband Channels

Supplementary to the many available automatic processing channels, go2MONITOR offers a range of functions for each available manual (i.e. user-selected and controlled) narrowband channel. Up to 8 independent manual narrowband channels are available, each supports:

- Modulation classification
- Automatic modem recognition
- Demodulation and decoding
- Recording (IF [I&Q], audio, bitstream)
- Live audio with squelch
  (CW, USB, LSB, AM, FM, digital voice)
- Integrated 'ResultViewer' database with intercepted content and metadata library

Adding File, Directory and Stream Inputs

New input types (signal sources) enable these functions to be used as part of an existing signal processing chain by connecting to other tools. Additional signal sources are now supported:

- File Input:
  Use a narrowband processing channel to process recorded files from a recording tool.

- Stream Input:
  Directly connect a narrowband processing channel to a digital IF (I&Q) source.

- Directory:
  Process archived recordings within a directory faster than real-time. Manage the directory and process new recorded files stored by other tools.
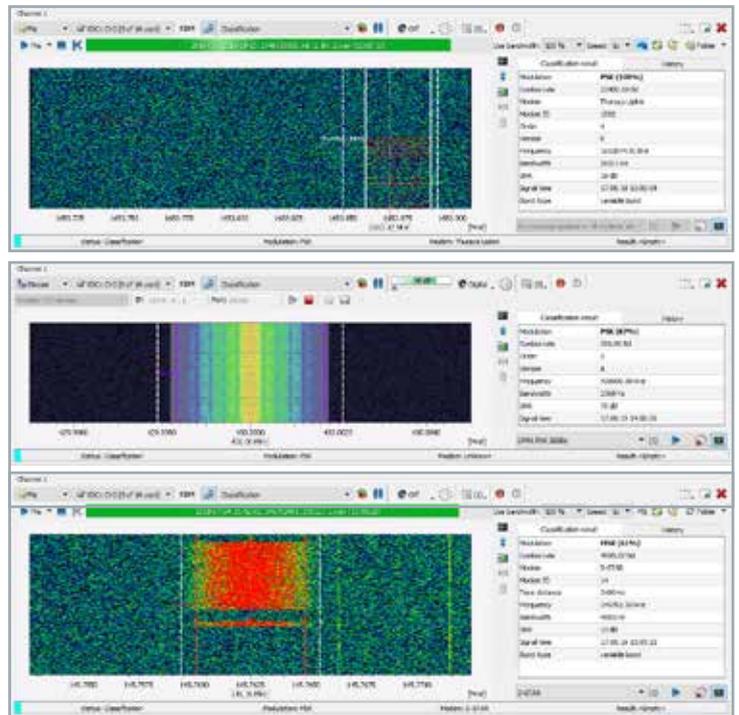

Narrowband channels with different input sources

Processing of FM-FDM 'Multichannel' Links

During manual or automated search initiatives, these potentially valuable emissions are often missed or disregarded due to lack of awareness but equally, due to lack of suitable FM-FDM demultiplexing & dechanneling capabilities.

User-selected by a single 'FDM' button, our new FM-FDM dechanneler delivers extraction, recognition and demodulation/decoding of each FM-FDM channel using an allocated narrowband channel. This capability enables real-time monitoring, recording & reporting of the channel-contents of these 'legacy technology' but still currently active V/UHF FM-FDM multichannel Line-Of-Sight (LOS) links.
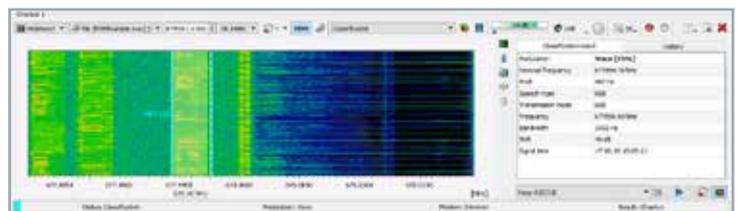

With FDM button pressed the multiple channels of the signals can be selected and processed

go2SIGNALS GUIs now optimized for portable low-SWaP Systems

Low Size, Weight and Power ('low-SWaP') communications surveillance systems are becoming ever-more capable. A small laptop PC running go2MONITOR and/or go2DECODE connected to a portable wideband receiver delivers a powerful signals exploitation capability as a light, man-portable or mobile/vehicular system solution, enabling even automatic wideband monitoring with parallel, multi-channel classification and decoding.

Hide/show Wideband Inputs
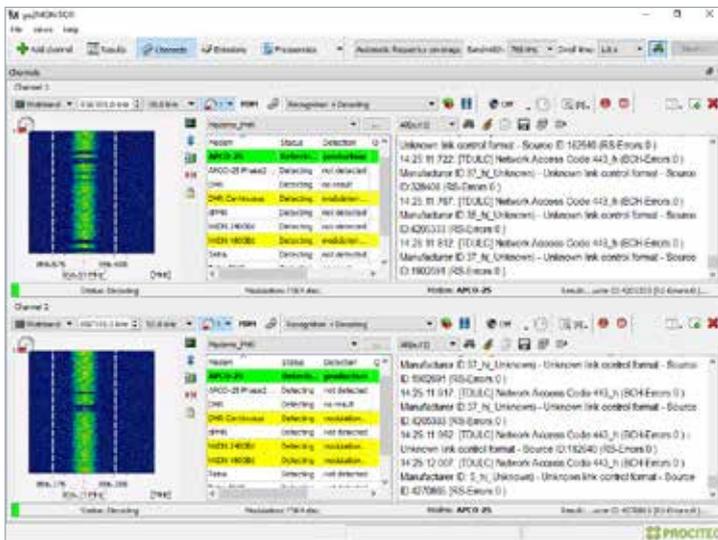
go2MONITOR as multichannel narrowband signal processing tool running on low-resolution (1024x768) display - wideband displays hidden

Wideband displays can now be hidden by the user, freeing up the laptop PC's display overhead to display only the narrowband channels. This new feature is particularly useful for laptop PCs with lower display resolutions.

go2SIGNALS GUIs now optimized for portable low-SWaP Systems

Redesign of the Narrowband Channel

To ease operator-burden when using a lower-resolution display, we've optimized the design of the narrowband channel windows in the go2MONITOR GUI.
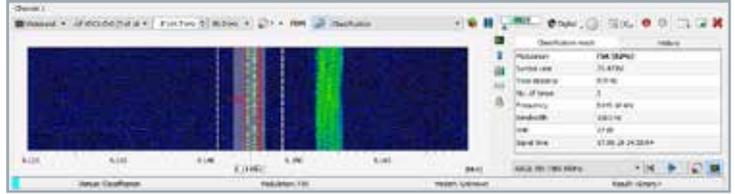

Redesign of the narrowband channels GUI

Operation in harsh Environments

As a result of feedback from our tactical users, we've added some functions in the go2DECODE GUI to simplify working in harsh environments:

- Hotkeys for rapid switching between maximized displays (e.g. whilst user is wearing gloves)
- Error messages shown in status bar in red for easier visualization
- Result Display:
  - Hotkeys and spin-box for rapid text zooming & sizing
  - Detection column now sorted by recognition status – recognized SOI always 'on top'
  - Sorting order is now restored at restart
  - Reasons for modem exclusion during automatic search is shown
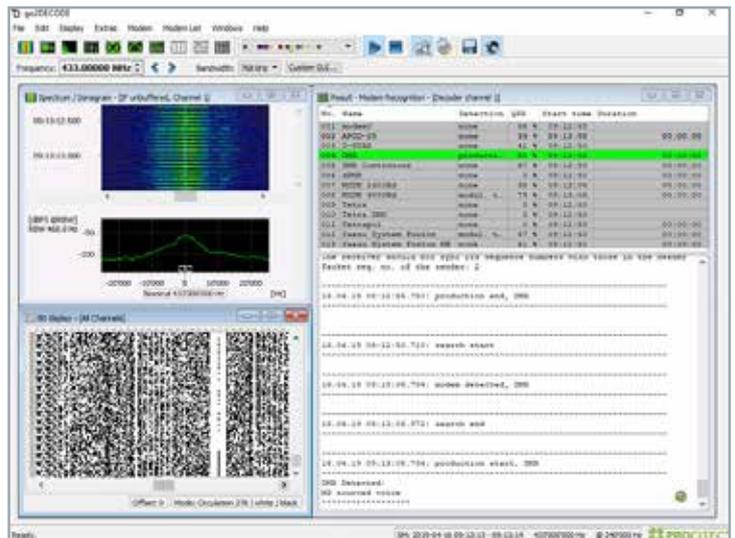
go2DECODE optimized for 1024 x 728 screen resolution

Decoder and Demodulator Improvements

As with every release we added new decoders and decoder functions in go2MONITOR and go2DECODE to enhance our excellent signal decoding coverage.

New Decoders Included:

- CIS AKULA
- APCO25 Phase 2 Downlink detector

Extended Decoder Modes and Functions:

- Mil39Tone:
  - Support for all bitrate and coding modes
  - Automatic mode detection
- DMR:
  - Support for TDMA dual direct mode
  - Decoding of rate 1/2 data messages
  - Output of binary data in HEX
- NXDN:
  - Improved rejection of non NXDN signals
  - Automatic key recovery (scrambler mode)
- Tetrapol:
  - Improved rejection of non Tetrapol signals
  - Detect if encryption is enabled
- STANAG4415: binary data output to file
- STANAG5065: binary data output to file

- STANAG4538/ALE3G: full decoding for BW2 and BW3 (was detection only), BW6
- Olivia: added mode with 64 tones
- APCO25: improved voice decoding
- YAESU Fusion: improved decoding performance with soft-decision
- Increased performance of SearchPattern DDL command significantly
- Changes in the decoder XML output format:
  - Output of decoderProperties at production start: decoder name and version, output channels in use etc.
  - XML namespaces for individual decoders
  - More XML metadata output for several decoders
  - Support for XML attributes

Extended Demodulator Functions:

- Mil39Tone: improved burst detection and frequency offset correction
- CODAN3212 16Ch: improved initial frequency offset correction
- DMR: improved channel filter
- STANAG4538/ALE3G:
  - New specific demodulator
  - Adaptive equalizer for PSK8 modulated bursts
  - Adaptive multipath tracking rake receiver for DSSS modulated bursts
  - Improved burst detection

Extended Detector Functions:

- Voice: output of burst (begin/end) information
- Improved voice detector for J3E USB/LSB Nominal

Classifier Improvements

go2MONITOR's modulation classifier has excellent modulation type coverage and, unlike others, also includes a modem classifier. Modems are recognized, even in a signal scenario with different modulation and modem types.

Modem classifier *		
HF/VUHF	**PMR**	**MIL**
ACARS-VHF	APCO-25	ALE 3G
CODAN 3212 16 Channel PSK	APCO-25 Phase 2 Downlink	CIS-45 (33 / 45 Bd)
CODAN 3012 16 Channel PSK	DMR	CIS-60
HFDL	DMR Continuous	CIS-93
PACTOR (I, II, II FEC, III, 4)	dPMR	CIS-112
Thuraya SAT Phone Uplink	D-STAR	CIS-128
	GSM (<3G)	LINK11 (CLEW)
	MPT1327 1200Bd MSK	LINK11 (SLEW)
	NXDN 2400 Bd	MIL-STD-188-110A Serial (single-tone) mode (a.k.a. STANAG 4539)
	NXDN 4800 Bd	MIL-STD-188-110B/C App. C (a.k.a. STANAG 4539 HDR)
	TETRA Downlink	STANAG 4285/4481 (PSK)
	TETRA Uplink	STANAG 4529
	TETRAPOL	STANAG 4539
	Yaesu System Fusion	
* The modem classification uses the modem descriptions files of the decoders. The list of the modems classified depends on the decoder options purchased.		

Modem classifier list

Additional Modem Classification

The modem classification feature now supports the following additional protocols:

- Yaesu System Fusion
- ALE 3G
- Thuraya SATPHONE Uplink
- APCO 25 Phase 2 Downlink

Newly supported Receivers

As with every release we support new receivers and add additional receiver features in go2MONITOR and go2DECODE:

- Receiver control support for NARDA SignalShark
- Signal input support for R&S ESMD receiver (control available optionally by using Python scripts)
- Support for ThinkRF R5500 (408/427) receiver
- Support for ThinkRF WSA5000 408 receiver
- ReceiverConfiguration tool: It is now possible to perform a functional test also for receivers which deliver signals directly into the software (NARDA SignalShark, IZT, SIR 21xx, ESMD)
- Better support for external ExtIO plugins: ExtIOs which implement only a 64-bit interface will also work

Two Wideband Inputs as Standard
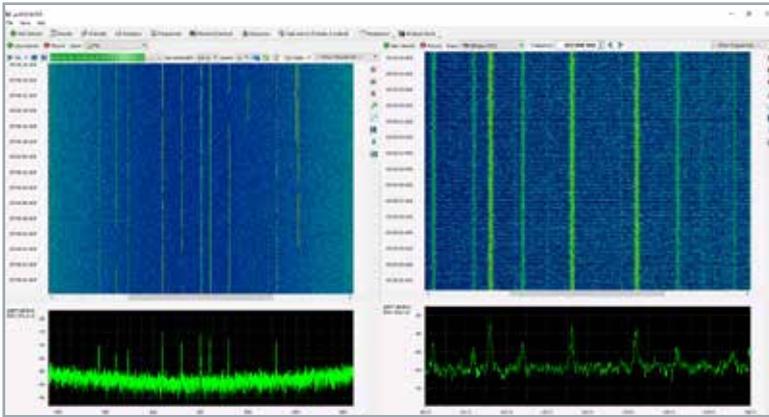
File and receiver input running in parallel

With release 19.2 go2MONITOR supports two wideband inputs as standard. Both inputs can be used independently up to the limit of the overall input bandwidth. For example:

- Working with two receivers at the same time (even combinations of HF and V/UHF receivers are supported)
- Use multiple output channels from the same receiver (e.g. WinRadio G39)
- Process 2 input files/streams at the same time

AutoCoverage Mode with faster Signal Search

Select fast search mode in go2MONITOR GUI

With AutoCoverage selected, go2MONITOR steps through frequency bands to search and process signals defined in the active Mission Plan for automatic processing. With this new feature we enhanced the speed by skipping classification of a frequency band if no energy was detected.

Redesign of AutoMon-Wizard
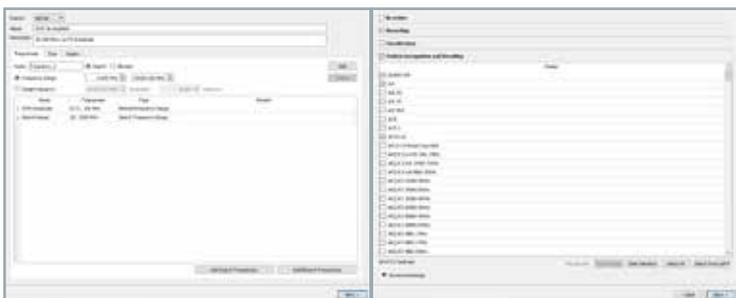
Reorganized AutoMon-Wizard

The AutoMon-Wizard is used to set up automatic monitoring task in go2MONITOR. We reorganized pages and page grouping, hide advanced options, redesigned extended summary page info …

New default Database PostgreSQL

go2MONITOR now uses the PostgreSQL database management system for all configurations for better database performance. Automatic data migration from older versions is included.

Support for PXGF streams

We added support for PXGF signal streams for go2DECODE and go2MONITOR. Also, a file converter PXGF->WAV is included in each installation.

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PROCITEC® SOFTWARE

go2MONITOR

go2DECODE

go2ANALYSE

PROCITEC GmbH
Rastatter Strasse 41
75179 Pforzheim
Germany

Fon +49 7231 155 61-0
Fax +49 7231 155 61-11
sales@procitec.com
www.go2signals.de / www.procitec.com

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