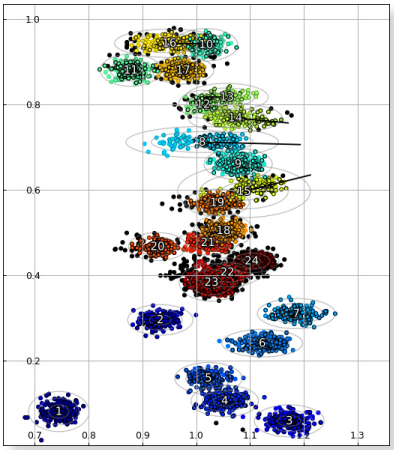
PRELIMINARY

DATA SYSTEMS

TRACK MONITOR ANALYZE GEOLOC

LYNKS TDMA DMX

Blind VSAT networks analysis tool



SATELLITE MONITORING SOLUTION

LYNKS TDMA DMX is an all-in-one solution for VSAT MF-TDMA networks monitoring, deep analysis and user cluster bursts.

Statistical-analysis based processing

LYNKS TDMA DMX does not rely on burst demodulation to operate. Instead, it embeds cutting edge blind statistical signal processing and machine learning. Resulting in a LYNKS TDMA DMX which is almost standard-independent and, by nature, easily expandable.

A standalone solution

LYNKS DMX can be standalone system or a software option to any LYNKS series solutions. Easily maintainable, upgradable and cost efficient.

An enabling technology

LYNKS TDMA DMX represents an enabling technology for VSAT MF-TDMA geolocation, VSAT interferer detection, VSAT network monitoring, VSAT return link mining, and much more...

Deep analysis

Space Domain Awareness

Geolocation

PRODUCT OVERVIEW

- Remote XML-RPC API for server control and custom user applications,
- Control and monitoring through the dedicated Graphical User Interface (using XML-RPC),
- Fits in optional hardware: LYNKS (19" mounted, RF capabilities)

MAIN FUNCTIONALITIES

- TDMA channels detection,
- Network type and modulation detection,
- Time-frequency structure determination,
- Per burst features extraction,
- Per clustered user bursts (logical ID attribution),
- Confidence level outputs.

OPERATING MODES

- "One-click" black-box mode for a fully automated in-bench integration,
- "Step-by-step" mode for VSAT monitoring and prospection purposes,
- "Expert" mode with advanced configuration capabilities for each processing stage.

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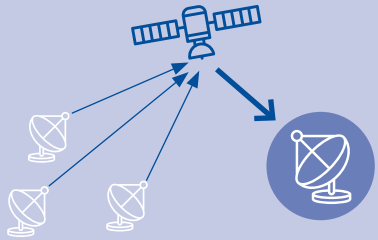
SATELLITE MONITORING SOLUTION

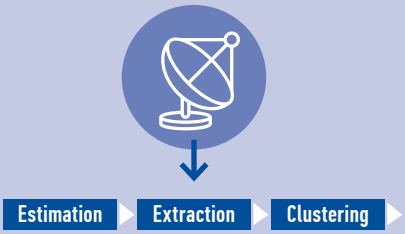
LYNKS – TDMA DMX

PRELIMINARY

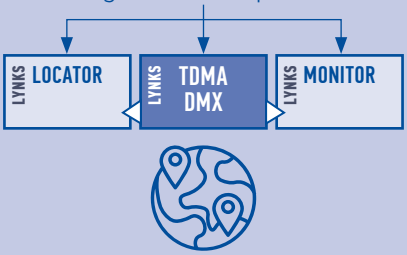
1 **LYNKS – TDMA DMX** collects the (MF-) TDMA signal from the return link



2 **LYNKS – TDMA DMX** performs blind estimation, extraction and clustering



3 **LYNKS – TDMA DMX** enhances monitoring and geolocation capabilities



TECHNICAL SPECIFICATIONS

Range of use

Networks ..... iDirect (from v1.0),
..... Hughes IPoS (from v2.0),
..... Romantis (from v2.0),
..... DVB-RCS based: roadmap
Modulation BPSK-QPSK-8PSK-OQPSK
Data Rate ..... From 128 KBaud per carrier
Frequency Bands ..... C & Ku. Ka: roadmap
Mean SNR ..... > 6 dB per channel
Network Topology ..... FSS Star Network
..... (FSS Mesh Network: roadmap)

Inputs/Outputs

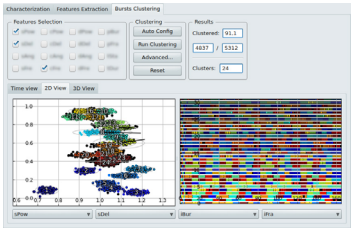
Main signal ..... From return link (VSATs -> HUB)
..... Meta data of the signal (fs, fc, t0,...)
Mirror signal (optional) ..... From return link (VSATs -> HUB)
..... Meta data of the signal (fs, fc, t0,...)
..... 2D search set* or differential infos
Characterization (optional: XML output) ..... TDMA detection (with C.I.)
..... Network detection (with C.I.)
..... Frame Length estimation
..... Burst Time Unit estimation
..... Symbol Rate estimation
..... Modulation detection
..... Per burst SNR estimation
..... Carrier-Freq. Offset estimation
..... Per channel occupancy rate
Time-Frequency grid estimation ..... Automated bursts detection:
..... • Burst start, burst end
..... • Time guard between bursts
..... • Time guard between frames
Per channel bursts clustering (optional: XML output)
..... Per-user logical ID attribution
..... Opt.: clustering reliability (+ C.I.)
..... Opt.: nth best user attribution
Status ..... Current system state

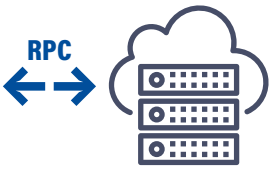
* This information can be provided by SAFRAN DATA SYSTEMS: LYNKS – LOCATOR system, coupled with SEE system or WeTrack service.
** C.I. = Confidence Index

SYSTEM SPECIFICATIONS

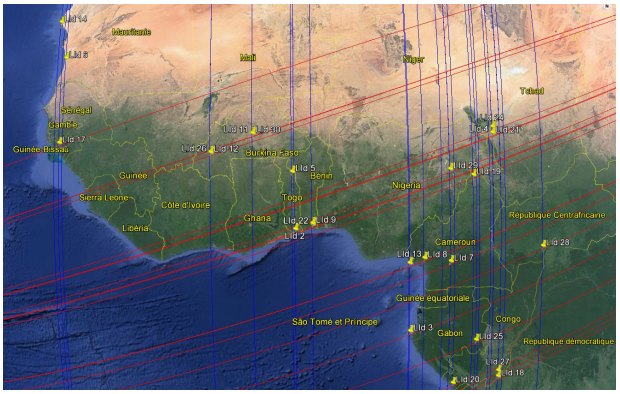
LYNKS – TDMA DMX is designed as a **client-server** solution running on GNU/Linux Debian 9. The software is thus dedicated to either standalone applications, expert analysis or advanced TDMA prospection needs.

The dedicated **Graphical User Interface** offers a full remote control of the software and its process flow.





The built-in **XML-RPC API** provides an easy way to integrate LYNKS – TDMA DMX in wider systems, such as VSAT terminals geolocation, TDMA monitoring solutions, prospection systems, and much more...



Find out how our solutions will transform your operations.

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