

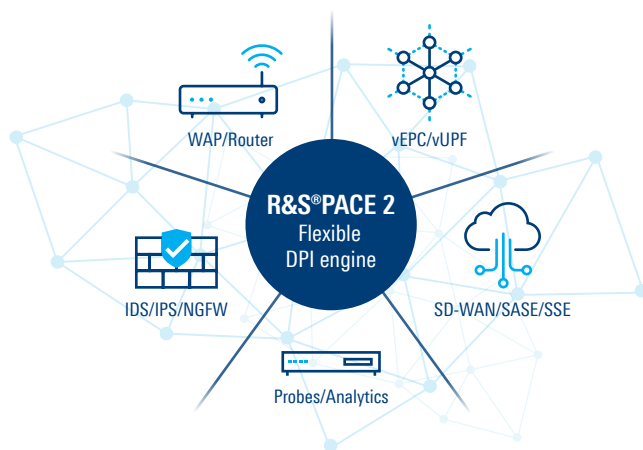


R&S® PACE 2

Future-proof OEM deep packet inspection engine for most accurate and reliable network visibility

R&S® PACE 2 is an advanced deep packet inspection (DPI) engine that empowers network equipment and software vendors to gain real-time IP traffic visibility. The software library uses DPI, including leading-edge classification algorithms such as machine learning (ML) and deep learning (DL), to classify network protocols and applications reliably, especially in encrypted traffic. Licensing R&S® PACE 2 enables vendors to boost their solution with future-proof DPI technology while concentrating on their core competencies.

Over the past years, the volume of internet traffic, the number of endpoints and the complexity of protocols have been increasing exponentially. New technologies such as cloud computing, 5G and widespread encryption are introducing new risks and opportunities. Network equipment and software vendors need to find ways to make network traffic visible despite frequent changes in applications and protocols as well as widespread encryption and obfuscation. In an increasingly competitive market, a solution must be easy to maintain at low maintenance costs and yet cover a high percentage of IP traffic reliably and accurately. By licensing R&S® PACE 2, vendors boost their solutions with state-of-the-art protocol and application awareness capabilities while saving significantly on development and maintenance costs.



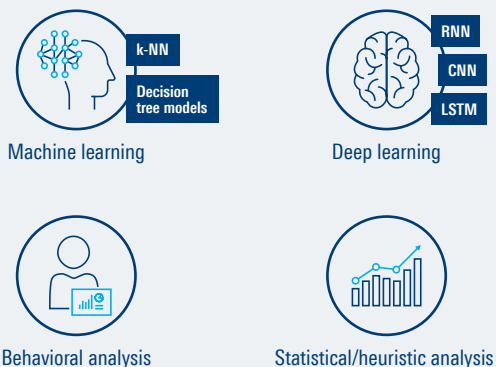
Key benefits of R&S® PACE 2

- ▶ **Granular visibility**
Market-leading classification portfolio with global coverage of apps and services
- ▶ **Always up to date**
Weekly signature updates, upgraded seamlessly during runtime
- ▶ **Encrypted traffic intelligence**
Advanced machine learning (ML) and deep learning (DL) techniques to classify fully encrypted traffic
- ▶ **Easy and fast integration**
Highly flexible API, platform agnostic, can be embedded in any networking equipment
- ▶ **Highly adaptable with additional features**
Numerous add-ons and plugins such as mobile tethering detection, custom app/service classifier, flow data exporter (supports IPFIX and sFlow)

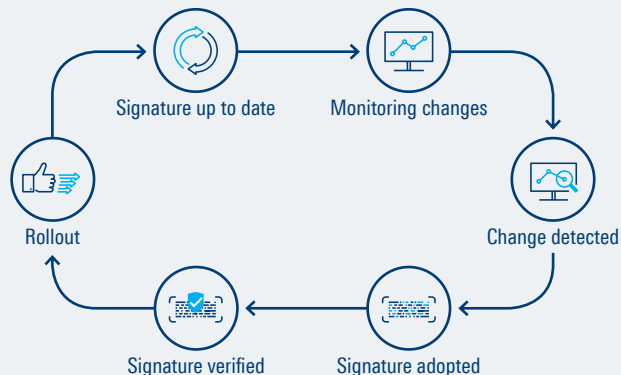
THE IPOQUE DPI SIGNATURE CORE

Shared across the ipoque DPI product suite

Advanced ML/DL capabilities combined with traditional DPI methods



Weekly signature updates



Encrypted traffic intelligence

R&S[®]PACE 2 delivers encrypted traffic intelligence (ETI) by leveraging advanced ML and DL techniques in combination with high-dimensional data analysis and traditional DPI methods such as statistical/heuristic and behavioral analysis. ETI utilizes a mix of advanced ML algorithms combined with different DL techniques to maximize the classification accuracy of R&S[®]PACE 2 and to identify new traffic signatures, not only for encrypted traffic but also traffic anonymized by CDNs and VPNs and traffic obfuscated by techniques such as randomization and domain fronting. ETI leverages over 1000 ML and DL features, including statistical, time series and packet-level features, and the ability to automatically identify and incorporate new features.

Benefits of licensing R&S[®]PACE 2

- ▶ **Accelerate time to market**
Stay ahead of competition and cut down on R&D costs by using a market-leading DPI engine
- ▶ **On-site support**
On-site application engineering and performance optimization consulting
- ▶ **Flexible SLAs**
R&S[®]PACE 2 product road map continuously aligned with customer needs and requirements

Key technical characteristics

- ▶ **Market-leading IP traffic classification**
Application, protocol and service classification with metadata extraction
- ▶ **Best performing scalar DPI engine**
High performance and linear scalability with up to 14 Gbit/s per core
- ▶ **Small memory footprint**
522 bytes per flow and 737 bytes per subscriber
- ▶ **Customizable processing stages**
Optional decapsulation, defragmentation, packet reordering and metadata extraction, adaptable to given use cases
- ▶ **Resilient to encryption**
Supports the latest encryption techniques, including TLS 1.3, TLS 1.3 0-RTT, ESNI and DoH
- ▶ **Easy integration with well-defined APIs**
Stable APIs with C public headers and integration examples
- ▶ **First packet classification**
Identification of applications on the very first packet for real-time traffic steering
- ▶ **Broad support for software frameworks and hardware acceleration**
Built-in integration code for packet frameworks such as DPDK or VPP and smart NICs

ipoque GmbH

A Rohde & Schwarz Company

Augustusplatz 9, 04109 Leipzig
Info: +49 (0)341 59403 0
Email: info.ipoque@rohde-schwarz.com
www.ipoque.com

Rohde & Schwarz GmbH & Co. KG

www.rohde-schwarz.com

R&S[®] is a registered trademark of Rohde&Schwarz GmbH&Co. KG

Trade names are trademarks of the owners
PD 3608.8270.32 | Version 02.00 | July 2022
R&S[®]PACE 2

Data without tolerance limits is not binding | Subject to change
© 2022 Rohde&Schwarz GmbH & Co. KG | 81671 Munich, Germany
© 2022 ipoque GmbH | 04109 Leipzig, Germany



3608827032