



Dragon Drive

The Natural Language and Services Delivery Platform

Combining Dragon Drive Speech, Link and Connect technologies provides the best-in-class natural language and services interfaces, empowering OEMs and drivers with:

Auto Grade Reliability

Nuance Automotive HMI teams work closely with OEM's to minimize driver distraction, a critically important consideration in today's complex driving environment. Over-the-air (OTA) update ensures Dragon Drive technologies are dynamically updated under the control of the OEM, to keep them running and performing as designed in a continually changing ecosystem.

Relevance Beyond the Car

Nuance provides users continuous interaction across multiple devices.

Faster Performance

Nuance continually invests in maximizing the performance and responsiveness of its products. Whether it's the time to launch an application, or translating speech into action. Performance is improved by leveraging the smartphone processor for decoding services.

Conversations

Now combining ASR-TTS-NLU with services context, the conversations become more predictive and intuitive.

Personality

OEMs want drivers to have an emotional connection to their cars, while maintaining differentiation. Nuance technologies are continually learning from driver's preferences web portal selections, local device content and driving patterns.

More than 70 million cars and 50 million portable navigation systems are powered by Dragon Drive technologies.

Our state-of-the-art interfaces—natural language understanding, speech recognition, text-to-speech, signal enhancement, predictive text, A2DP connectivity, most popular Services and more—keep drivers safe and connected behind the wheel.

Dragon Drive is an overarching naming convention for three feature rich, auto-grade technologies. Auto-grade means each technology has been tested by engineers, under 60 mph driving conditions.

Dragon Drive technologies are categorized into three specialized solutions working in unison.

Dragon Drive Speech

Next generation state-of-the-art ASR and TTS technologies

- VonCon 4.5 & Vocalizer Expressive

Dragon Drive Link

Smartphone connectivity between car and Nuance servers

- Peer Communication Framework (PCF)
- *Coming Soon!* - Advanced Multimedia Platform (AMP)

Dragon Drive Connect

Server platform

- Nuance Web Services
- 3rd Party Services
- *Coming Soon!* - Natural Language Understanding



Advanced Multimedia Platform (AMP) Audio Management

Coming Soon!

Initially Only Available in Europe and North America

AMP is a handset audio management component responsible for servicing head unit audio command control requests, decoding audio stream from source providers, serving up album art and textual information via A2DP. AMP includes an audio library, which exposes generic command and control APIs to stream music. By using a Nuance audio service handler, AMP eliminates the need for the peer device to understand the implementation of each audio provider.

APIs

- Audio provider list
- Audio content initialization
- Interval audio provider meta data requirement retrieval
- Media player playback control
- Add/delete song or station to favorites
- Search by artist, track or station.
- Audio Provider preferences (i.e. version, GPS tracking)

Service handlers

- Pause/resume music for incoming phone call
- Audio playback auto recovery.
- Manage multiple audio providers simultaneously, browse content from one provider while streaming music by another provider

Peer Communication Framework (PCF)

PCF is a peer-to-peer network transport, enabling unrestricted data transfer between a mobile handset and a peer device, such as a head unit, over a Bluetooth or Universal Serial Bus (USB) connection. PCF consists of several network components built on a foundation of open network protocols, each with its own application programming interface (API). The components provide support for exchanging data and making service requests between the peers.

Mobile server

- Authentication Control List (ACL)
- Hypertext Transfer Protocol (HTTP) 1.1 GET and POST
- Transmission Control Protocol (TCP)
- Internet Protocol (IP)
- Serial Line Internet Protocol (SLIP)
- Radio Frequency Communication (RFCOMM)

Mobile OS support

- Android
- iPhone
- BlackBerry
- Win Phone 8 (coming soon)
- Mobile Information Device Protocol (MIDP)

PCF connectivity

- Bluetooth 2.0 + Enhanced Data Rate (EDR)
- Universal Serial Bus (USB)
- IAP for iOS (Bluetooth or USB)

Device registration

- Registers services based on VIN and Users
- Identify Head Unit specific models to send OTA software updates

Backward compatibility:

- Multiple IP address support
- Enables OEMs flexibility to source multiple Head Unit Makers, while supporting prior units

Informative messaging

- Specific contextual error notifications.
- Differentiates between PCF and server cloud errors

Performance

- SSL Request in HTTP Headers, parsing query string
- Reduce user bandwidth consumption
- Data exchange compression

Industry Accolades

2013

Telematics Update –Winner for best Content Provider

Automotive News- Finalist for PACE Award

2012

Wired Magazine – 2nd best telematics solution in the market

2011

CNET – Toyota Entune wins CES Best in Show

Popular Mechanics – CES Editor’s Choice

Int’l Telematics Update- Finalist for “Industry Newcomer Award”

iSuppli – Top Rated Overall Infotainment Solution

Detroit Telematics – Best Cloud based In-car Application

Web Services

Web services which enable OEMs to offer users integrated voice-enabled and location-based internet services combined with vehicle information and complete OEM HMI control. Nuance web services encapsulate leading service providers to work reliably, safely and intuitively in a vehicle environment.

Feature	Benefits
Performance	Connection speeds equivalent of directly connecting to Service Provider
Monitoring	Non-evasive Service Provider performance monitoring
Transformation Engine	RESTful based API to broker Service Providers
Latency	Encapsulates a single API to prevent low-latency
Abstraction	Insulates OEM and users from Service provider API changes
Normalize	Harmonizes multiple Service Provider APIs into a single common interface, enabling rapid development and deployment
Persistent	Empowers Service Providers to focus on mobile market demands while Auto OEMs don’t need to invest in Head Unit software updates
Disaster Recovery	Multiple data centers for disaster recovery failover
Feed Readers	Ingests data, manage job schedules and processing speeds to ensure systems and services have the freshest content
System Reporting	OEM accessible customer usage, service usage, production environment performance, disaster recovery and server load balancing analytics reports
User Portal	“Account Linking” capabilities empower user to enter multiple user ID and passwords in a one-time setup, so that subsequent authentications don’t require a login
Service Center Portal	Factory and dealer integration empowers OEM customer support representatives and dealers to access vehicle information, owner profile specifics and service preferences, enabling them to provide customers with faster and more personalized service
Vehicle Owner Portal	OEM-branded website that enables vehicle owners to set up a profile, selects service preference selections, and associates a secondary account
Gateway Portal	Sets the access token in the Nuance user database and access token expiration in the distributed cache. Links and unlinks third-party credentials for a given service to the user. Retrieves the list of services available to the user
Over-the-Air (OTA)	Service Provisioning provides easy updates to head unit software to support adding, modifying, and removing services without disrupting performance
Service Level Agreement	99.5% (note: doesn’t guarantee Service Provider service level guarantees)

Coming Soon! - Extensibility

Oath2 Encryption	In-flight (https://SSL) and Data-at-Rest Advanced Encryption Services (AES)
Notification Engine	Ability to push in app messages based on OEM controlled approval
Business Intelligence	Performance monitoring and comparisons throughout entire system



Dragon Drive Services

Localized Services Platform

About Nuance Communications

Nuance is the leading provider of speech and imaging solutions for businesses and consumers around the world. Its technologies, applications and services make the user experience more compelling by transforming the way people interact with information and how they create, share and use documents. Every day, millions of users and thousands of businesses experience Nuance's proven applications and professional services. For more information, please visit www.nuance.com.

Services Currently "Live" in Production

Category	Partner
Local Search, Geocode look-up	Bing POI, Yelp
Internet Music	Pandora, Slacker
Internet Radio	Clear Channel
Weather	NOAA, Accuweather
Fuel	OPIS/Gas Buddy
Stocks	Xignite, NASDAQ, Dow Jones, CME Indices
Sports	STATS
Restaurant Reservations	Open Table
Movie Listings	Cinema Source
Ticket Purchases	Movie Tickets
Time Zone Service	Ask Geo / Vector Magic
Review Service	Yelp
Check-in	Facebook

2014-2015 Planned or WIP Services

Category	Partner
Location Sharing	Glympse
Internet Music	Rdio, Amazon, MOG/Beats
Internet Radio	TuneIn
Social Update Service	Twitter
Local Search	Nokia, TomTom
Parking	Parkopedia
News	Reuters
Speed Trap Detection	TBD
Turn-by-turn Directions	TBD

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