novauris

Speak, Find. ...EASY!

Single-Input Voice Search
for Embedded Applications

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NovaSearch® Voice Search

- SILVR™ (Single Input, Large Vocabulary Recognition)
  - Powerful (because it’s simple)
  - Flexible (input)
  - Versatile (tasks, platforms)
- Embedded as well as Client-server based
- All core engine technologies and IP developed in-house
**Embedded Voice Search**

- **What is it?**
  - Voice search of information locally stored in the device
  - Processing done on the device without server

- **Why is it interesting?**
  - Device capabilities (CPU, storage) increasing
  - Challenges in user interface for information access
  - No network dependencies (QoS, latency, charges)

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**NovaSearch® Compact**

- Embedded speech recognition for speaker-independent spoken access to large databases
  - Largest application built: one-shot US address search
    - >5.2M street-city-state items; >320,000 words in vocabulary
  - Also supports “simple” tasks (commands, digits, etc)
  - Operating systems supported
    - Windows CE, iPhone, Linux
  - Hardware requirements
    - CPU: ARM/Xscale (400MHz+ recommended)
    - Memory (e.g. US Address): 6.5MB (RAM); ~500MB (NVM)
  - Languages: English, Japanese, Korean
**NovaSearch Compact: Demos**

Address Search for Navigation
One-shot US address entry

POI Search for LBS (US English)
US Points of Interest

POI Search for LBS (Japanese)
Japan Train Stations

Digital Media Access
Say It, and Play It!

**NovaSearch Compact: Demos**

Address Search for Navigation
One-shot US address entry

- Any number-street-city-state e.g. “8860 Boundbrook Ave, Dallas, Texas”
- Natural input for street numbers

Optional Fields:
- Directional qualifier (N/E/S/W...)
- Street classifier (Blvd, Ave...)
- Device: HP IPAQ hx2795
- OS: Windows Mobile 5
- CPU: Marvell PXA310 (624MHz)
- Required RAM: ~6.5MB
- Required ROM: ~500MB (DB)
**NovaSearch Compact: Demos**

**POI Search for LBS (US English)**

**US Points of Interest (POIs)**
- 50,000 POIs
  - Common POIs (Starbucks)
  - Categories (Hospitals)

**US POI-City-State**
- Generic POI + city + state
  - 300+ common/categories
  - 2,500 cities
- Device: HP iPAQ

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**NovaSearch Compact: Demos**

**POI Search for LBS (Japanese)**

**Japan Train Stations**
- 9,000+ Japan railway stations
- Short and confusuble sets

**Tokyo Train Routing**
- “From A to B”
- 350+ stations in the Tokyo area
- Device: Apple iPhone 3G, iPAQ
NovaSearch Compact: Demos

Digital Media Access
Say It, and Play It!

NovaSearch Flex Jukebox

- 10,000 song titles and artists

Input flexibility:
- Title by artist (Hey Jude by the Beatles)
- Artist, title (The Beatles, Hey Jude)
- Title only (Hey Jude)
- Artist only (The Beatles)
- Device: HP iPAQ

NovaSearch Compact: Demos

Flexible Phrase Recognition
Handheld Translator / Robots

Phrase Translation
- Spoken English phrases into Japanese and Korean
- Covers 1,500+ base phrases spoken in many different ways

Examples:
- "I'm afraid the TV is broken"
- "There seems to be a problem with my television"
- "Unfortunately, the TV isn't working"
- "The television's faulty, I'm afraid"
- etc.
More demo Videos on YouTube

www.youtube.com/novauristechnologies