

NEC DISPLAY SOLUTIONS

# NEC leafengine



## UNIFIED SENSOR - SOFTWARE CONNECTIVITY



### Context Aware Digital Signage with leafengine

With the largest installed Digital Signage Display base worldwide, NEC have developed leafengine, drawing on years of delivering innovative signage solutions to key industries such as retail and transportation. The leafengine middleware offers institutions digital experiences, that react to visitor's input, attributes or actions, and customises content whilst gathering the rich market data generated.

In the past, this has required selecting, integrating and maintaining an ever-changing, ever-updating number sensors with the player software, but leafengine, is designed to overcome this complexity and enable access to a broad catalogue of sensors, including gender and age classification, proximity detection, NFC, QR-Codes and many others available today and in the future.

NEC's leafengine integrates with existing Digital Signage software, drastically simplifying the integration, replacement and testing of new sensors. Once enabled, it allows reaction to changes in environment to select and play content that matches the user's profile or captures audience data for later analysis.

#### SCENARIOS AND BENEFITS

In combination with Digital Signage Software, the leafengine is opening new possibilities in nearly every branch.

**RETAIL** Providing additional information on products picked up with the possibility for cross- and up-selling, feedback on perception of products and communication

**DOOH** Adopting content according to age and gender to match communication even to a defined target person

**LEISURE** Combining interactivity with processes like approach to use the display efficiently for overall communication

## BETTER AWARENESS, BETTER BUSINESS

Traditional digital signage solutions rely on demographic statistics to target specific audiences. Commonly the content is changed against pre-set times and dates, rendering it insensitive to any unforeseen circumstances.

In contrast, leafengine enables the signage solution to react in real time to the current situation, based on the input from any number of sensors. This includes, for example, determining the most picked-up products, the empty or crowded areas in a store, and of course, real time demographic and engagement data.



### IDEAL SECTORS AND APPLICATIONS

leafengine IS AN IDEAL SOLUTION FOR

- Retail
- Airports and Transportation
- Leisure and Entertainment
- Facility Management / Corporate
- DOOH

ENHANCING VIEWER EXPERIENCE AND INTELLIGENCE IN

- Queue Management and Waiting Time Infotainment
- Product Selection Assistance
- Intelligent Child Care and Entertainment
- Automated Sizing and Relevant Product Matching
- Luxury Product Demonstration
- Product Presentation Supported by Gesture Interactivity
- Completing Missing Information on Products

### EXAMPLE IN ACTION: RETAIL

A retail outlet with 10,000 product sales a day launches a new organic tea with a special promotional price – online as well as print. Context aware digital signage reacts to customers approaching the aisle by detailing the offer, and adjusts the content with cross-selling options when a package of the tea is picked up from the shelf. With leafengine, this is achieved by using a proximity sensor and a shelf push sensor that detects product removals.

Additionally, the system now knows that the shelf has been approached 1000 times and 10% of the customers actually picked up the tea, but sales are only 40 units. By comparing the approach and pick-up rates against POS data for competing products it is a simple matter to analyse the promotion results.

#### STEP 1

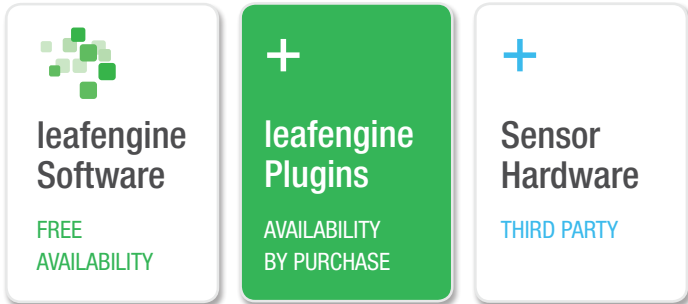
As a customer approaches the product in the aisle a proximity sensor detects their presence and signage content is adjusted to highlight the current promotion and provide further additional information on the promotion.

#### STEP 2

As the Customer picks-up the tea, leafengine identifies the event (using the push sensor) and reports a product removal from the shelf. The application can then record the action and trigger a content change to show the cross-sale options.



## THE SOFTWARE SOLUTION

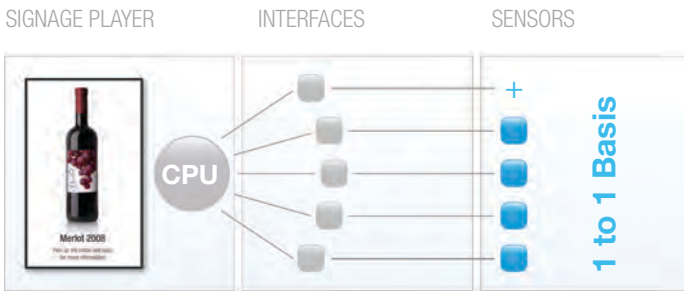


leafengine offers an HTTP API to applications for data retrieval, management and monitoring. Additionally, a web GUI enables human operators to graphically manage the leafengine and observe the data in real time. This provides applications with a flexible, robust, and scalable solution, as well as facilitating rapid prototyping. Additional functionalities include:

- Push and Pull Mapping** Query the sensors or be automatically notified of changes  
Organize your sensors and avoid modifying the application when a sensor is replaced
- Filtering** Get only the data that is relevant for your application
- Low footprint** Runs on the existing player PC or low-power hardware

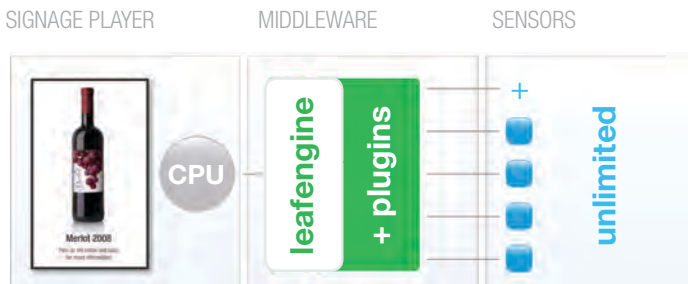
### CONVENTIONAL MULTIPLE INTERFACE APPROACH

Before leafengine each sensor would need its own software management solution to connect and be recognised by the signage software.



### leafengine UNIFIED MIDDLEWARE SOLUTION

The NEC leafengine solution has plugins for an ever-growing list of sensors. It handles sensor interfaces and how they deliver data, providing a single entry point to an otherwise heterogeneous and hard to maintain setup.



### GENUINE BENEFITS

#### FOR CUSTOMERS (SITE OWNERS)

- Feedback on customer behavior and perception of goods and processes
- On the fly adaption to consumer and business needs
- Cross and up selling
- Increase exhibition space efficiency based on interactive data
- Content and promotions according to captured target group
- Enhanced customer experience
- Increased customer attention, awareness and satisfaction

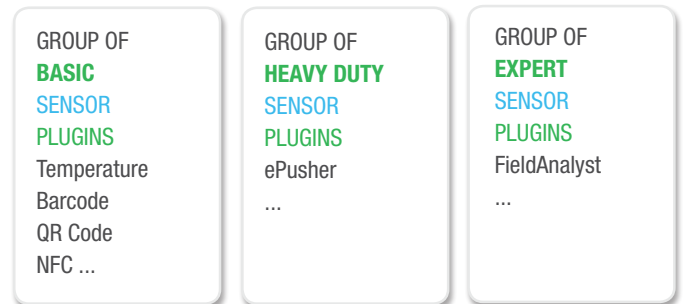
#### FOR INTEGRATORS / DIGITAL SIGNAGE SOFTWARE MANUFACTURERS

- Approach a broader range of target groups
- Reduced software development/ integration effort
- Simplify the development of new ideas and scenarios and adapt customer ideas and demands
- Significantly decrease time to market
- Constant enhancement due to new sensors and applications
- Add-on to existing software

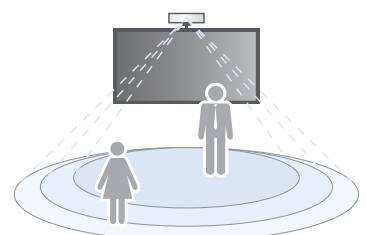
### PLUGIN CLASSES

Plugins are grouped into classes based on data structure complexity and integration effort, and this is in turn reflected in the pricing.

Plugin packages are available at special pricing as well as to support scenarios that require multiple sensors.



In combination with NEC FieldAnalyst the leafengine can create one of the most powerful audience measurement and context aware signage solutions available today.





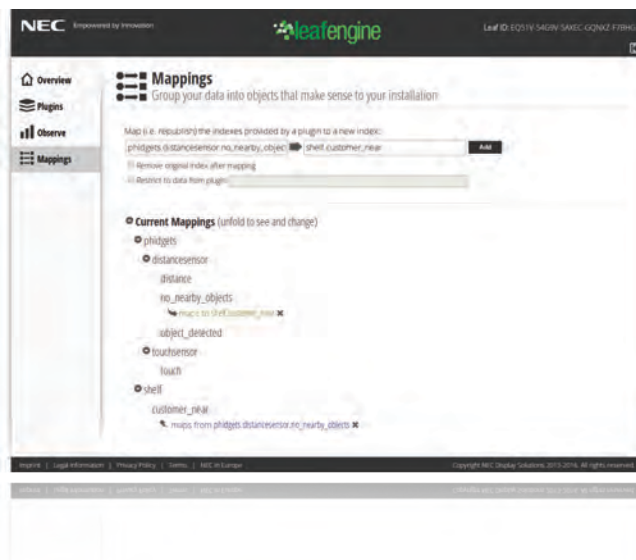
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### SYSTEM REQUIREMENTS

The leafengine is written in Java, designed to be installed on the Player PC or by itself and is compatible with multiple operating systems.

<p><b>SYSTEM</b></p>	<p><b>HARDWARE:</b> Intel/AMD processor (&gt;1GHz), 64MB RAM. Certain plugins may increase the requirements.  <b>OPERATING SYSTEM:</b> Windows and Linux (Ubuntu distribution recommended)  <b>SOFTWARE:</b> Java SE Runtime Environment 1.6 or newer (Oracle recommended).</p>
<p><b>FEATURES</b></p>	<p>Windows and Linux compatible                  Graphical User Interface (GUI)                  leafengine portal for online administration                  Variable Mapping, Push &amp; Pull Functionality, Filtering to support quick programming &amp; rapid prototyping</p>



### GETTING STARTED

Leafengine download, administration and updates are done over the leafengine portal, as well as information on sensor specifications, the latest sensors and the supplier's details.



Please visit:  
[www.leafengine.com](http://www.leafengine.com)



**REGISTER AT THE PORTAL**

Access information

**DOWNLOAD AND INSTALL**

leafengines online

**PURCHASE PLUGINS (offline)**

From NEC / Partner

**ALLOCATE PLUGIN TO leafengine**

Purchased Plugins

**SELECT & INSTALL PLUGINS**

For a defined sensor

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