

SIDEVAN. Congruence and Emotion Detection on Open Source for Neuromarketing Applications

Application to monitor the degree of trustfulness in spoken messages on VoIP systems for neuromarketing and contact centers

*The basic technology for the development of these systems relies in the advanced speech processing for the extraction of biometrical and emotional marks in phonation, difficult to be forged, and of high statistical reliability. This technology has been developed and patented by the team responsible of this technological offer, and is being used in restricted fields of Medicine, Neurology, Teaching, Homeland Security, Police Forces and Speaker Biometry. This technology is oriented to develop a special line devoted to electronic commerce and contact center assistance in **neuromarketing** and the **web of things**. Its main applications are to be found in platforms and services for commercial transactions by VoIP, emergency contact centers (health systems, catastrophic events...), tele-assistance to handicapped, third age , gender violence, threat to persons and facilities, tele-banking, etc.*

Technology solution supported by the Technical University of Madrid

Technology solution

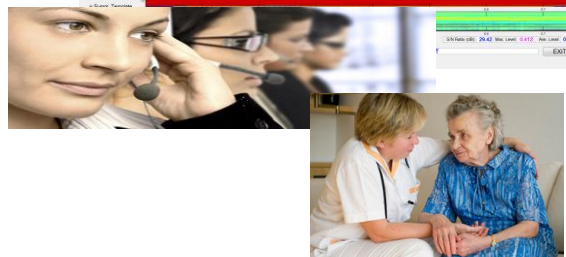
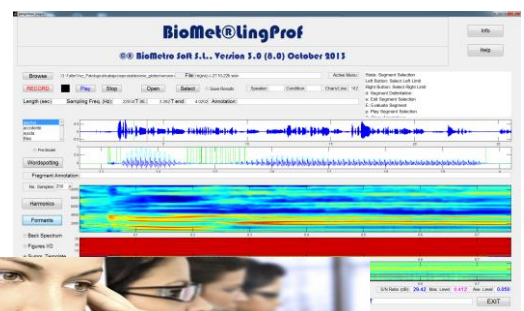
The solution proposes an integrated man-machine interface to monitor the emotional state and the truthfulness degree on discourse systems based on VoIP supporting a specific attention service. This interface offers an *on-line* description of the spoken discourse, event spotting with *semantic atoms*, the production of *html* messages to attention servers, the documentation of each transaction regarding impact factor and legal and contractual conditions, etc.

This solution offers a substantial improvement on the treatment of client-service relations regarding *Customer Resource Management* as well as *Customer Oriented Services* creating a three-band fully automatized framework: Client-Server-Supervisor.

The objectives of this technology are prioritizing user attention in resources and personnel, optimize transaction impacts, and associate statistical and juridical documentation

Areas of application

- **Sector 1:** Networking: Medicine, Homeland Security, Banking
- **Sector 2:** Advanced -eHealth and Personal Care
- **Sector 3:** Independent Life, e-Inclusion, Self-governance



Market demands

Secure Access to Facilities and Services

- Identity verification in health attention services, emergencies (gender violence, homeland security, third age attention, e-Health, etc.)
- Restricted access to applications and services for companies and institutions based on voice biometry.
- Oriented to public and private agencies in health services, third age care, security-based contractual services (juridical advice, financial advice, commercial and investment banking, etc.)

Customer Resource Management/Oriented Services

- Non face-to-face contracting services, customer attention incidence handling, VoIP marketing services, call-handling protocols in security centers (gender violence, threats to persons, facilities or resources)
- Tele-assistance and contact-center services.
- Service automatization and derived needs to improve transaction scores.

Neuromarketing

- Study of the impact of voice profiles and emotional states in client-agent transactions..
- Tele-marketing, tele-assistance, neuromarketing.
- Automatic monitoring of voice transactions.

"Handling this type of knowledge is of vital importance in neuromarketing and applications of the semantic web, in full alignment with the BRAIN Initiative promoted by NSF-NIH"

Market potential

Secure Access to Facilities and Services

- Transactions for identity verification in call centers (USA): costs around 20.000 M\$ yearly
- Cost by transaction in terms of agents (30 s for transaction): 0.7 \$
- Expected cost reduction: 0.2-0.4 \$
- Annual transaction growth rate: 20%

Source: <http://www.redbooks.ibm.com>

Customer Research Management/Oriented Services

- Spain's market numbers (2013): 1.468 M€ (+4%)
- Employing 67.000 persons (+5%)
- Agent /transaction costs: 2-4 €
- Expected transaction hits: 3-5% (baseline in 2)%

Source: <http://www.networkworld.es>

Neuromarketing

- Current market numbers (USA): > 10.000 M\$
- Annual transaction growth rate: 25%
- Expected improvement by transaction: 200-300%

Source: <http://www.nature.com>

Competitive advantages

- Improvement in transaction hits up to a 200%, reduction in transaction attention times till 60%
- Implantation/adaptation costs under 50.000 € per center (for 100 posts)
- Easily implantable (ubiquitous, transparent, easily accepted by users compared to other systems, as facial, iris, or fingerprint)
- Highly reliable (false positive rates under 1 in 1 million accesses with false rejections under 1 in 100). Verification of emotional stress over a reliability of 99.45%.
- Grants juridical support against fraud, forgery or by the contracting part.
- Technology complementary to other existing ones.

References

Hospital Universitario Gregorio Marañón, Hospital del Henares, Consejo Superior de Investigaciones Científicas, Universidad Autónoma de Madrid, Universidade de Porto, Ecole Superior de Telecom de Tunisia, Centro de Rehabilitación del Lenguaje de Madrid, Servicio de Criminalística de la Guardia Civil...

IPR

- Patent granted in Spain ES2364401
- Patent applied in USA 14/127,202

Development stage

- | | |
|-------------------------------------|---|
| <input type="radio"/> Concept | <input checked="" type="radio"/> Industrial Prototype |
| <input type="radio"/> R & D | <input type="radio"/> Production |
| <input type="radio"/> Lab Prototype | |

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