



VoiceBiometricsConference

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3:30 pm – 4:00 pm

Reality Check: e-Government Applications for Voice Authentication

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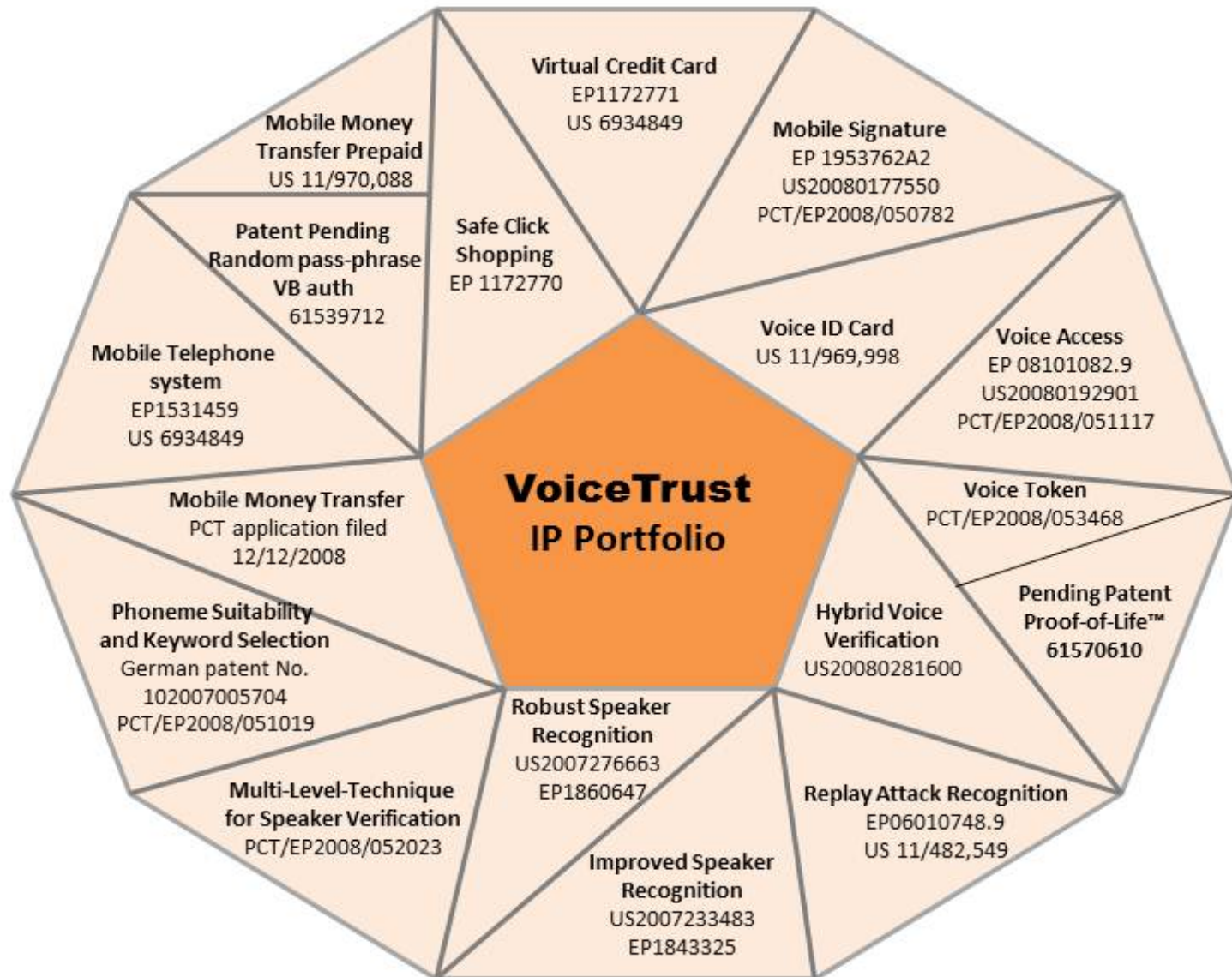


Leaders in Voice Biometrics

Certified
Voice
Authorize
Mobile
Phone
Voice Trust
Biometrics
Instant
Secure

- ❑ Dutch company established in 2000
- ❑ Owner: Ramphastos Investments NV
- ❑ Innovative - strong IP portfolio
- ❑ PhD researchers on staff
- ❑ Exclusive relationship with leading research institute (CRIM)
- ❑ Certified by Common Criteria Voice Biometrics - EAL 2 SOF medium





e-Government applications for voice authentication

Governments need a reliable registry of their citizens for:

- Services (e.g. healthcare, welfare, education, financial aid,...)
- Income Taxes
- Passports, Visas and Licenses
- Financial disbursements (e.g. Pensions)
- Safety and Security

VoiceTrust e-Government Projects:

- National ID program
- Proof-Of-Life™
- e-Services

Case Study

National ID program – Emerging Nation

- ❑ 10 million citizens
- ❑ 50% of citizens do not possess a National ID
- ❑ Program in place to register citizens and provide IDs
- ❑ Nation was struck by a natural disaster – citizens lost their personal belongings (including IDs)

This national ID program is designed to enable citizens to:

1. Participate in Gov't programs
2. Obtain a passport, license, visa
3. Get a job
4. Go to school
5. Vote
6. Acquire a title

Stakeholders of National ID Registry:

- Ministry of Justice
- National Identification Office
- National Archives
- Ministry of Finance (income taxes)
- Ministry of Interior (passports)
- Central bank
- Others...

When a citizen registers:

1. Their photo is taken
2. Their fingerprints are taken
3. Their signature is recorded

However, their voice is not yet registered



Limitations of the current national ID registry

- ❑ A fingerprint reader is required at each location (cost/infrastructure/IT personnel)
- ❑ Fingerprint readers have a high false rejection rate for manual workers (cuts, worn prints, dryness,...)
- ❑ Reliable remote authentication is not possible - citizens must come into local offices to have their identities verified
- ❑ Corporations cannot reliably verify a person's identity (e.g. when opening a bank account)

VoiceTrust partnered with a major telco well-established in the emerging nation

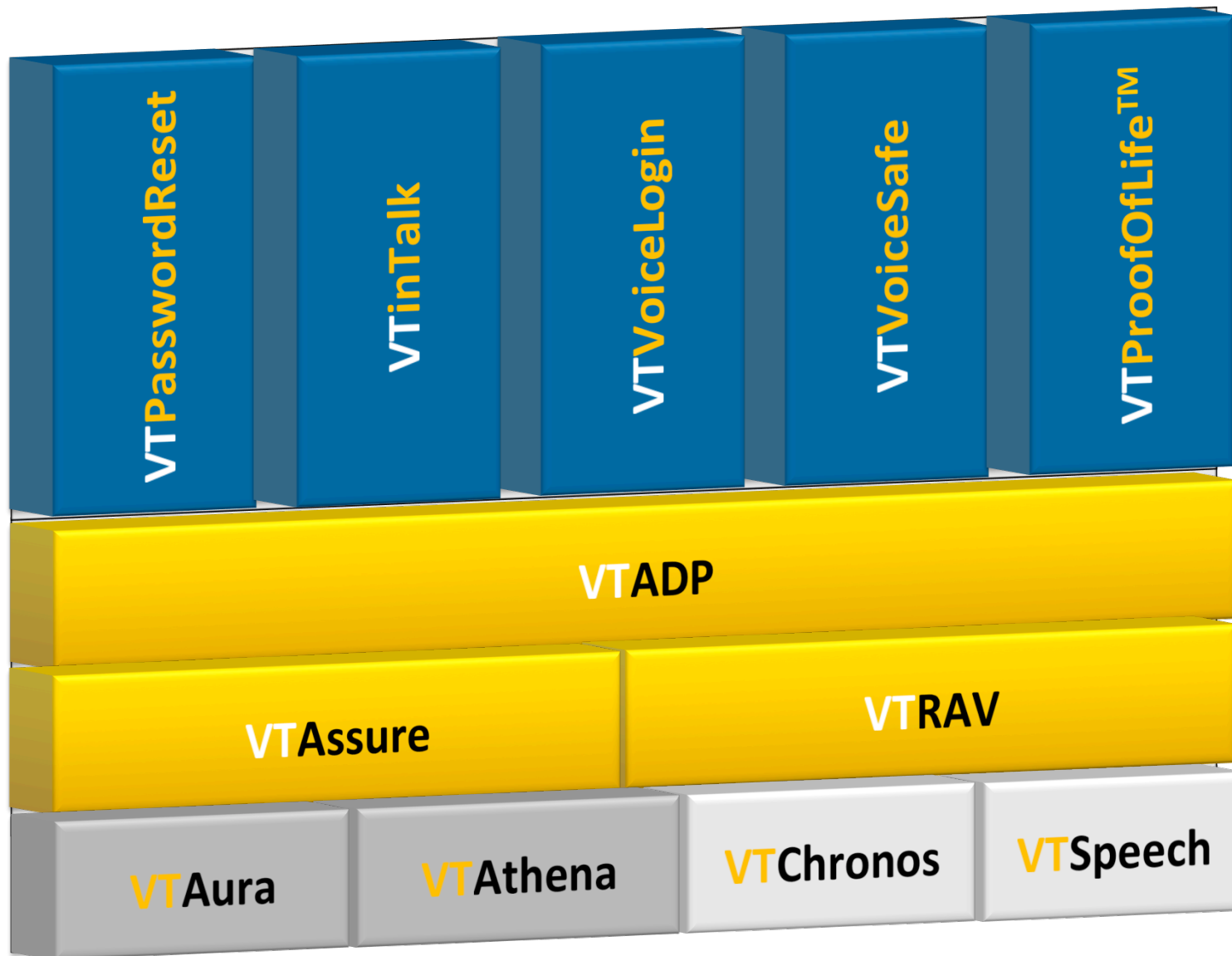
Project:

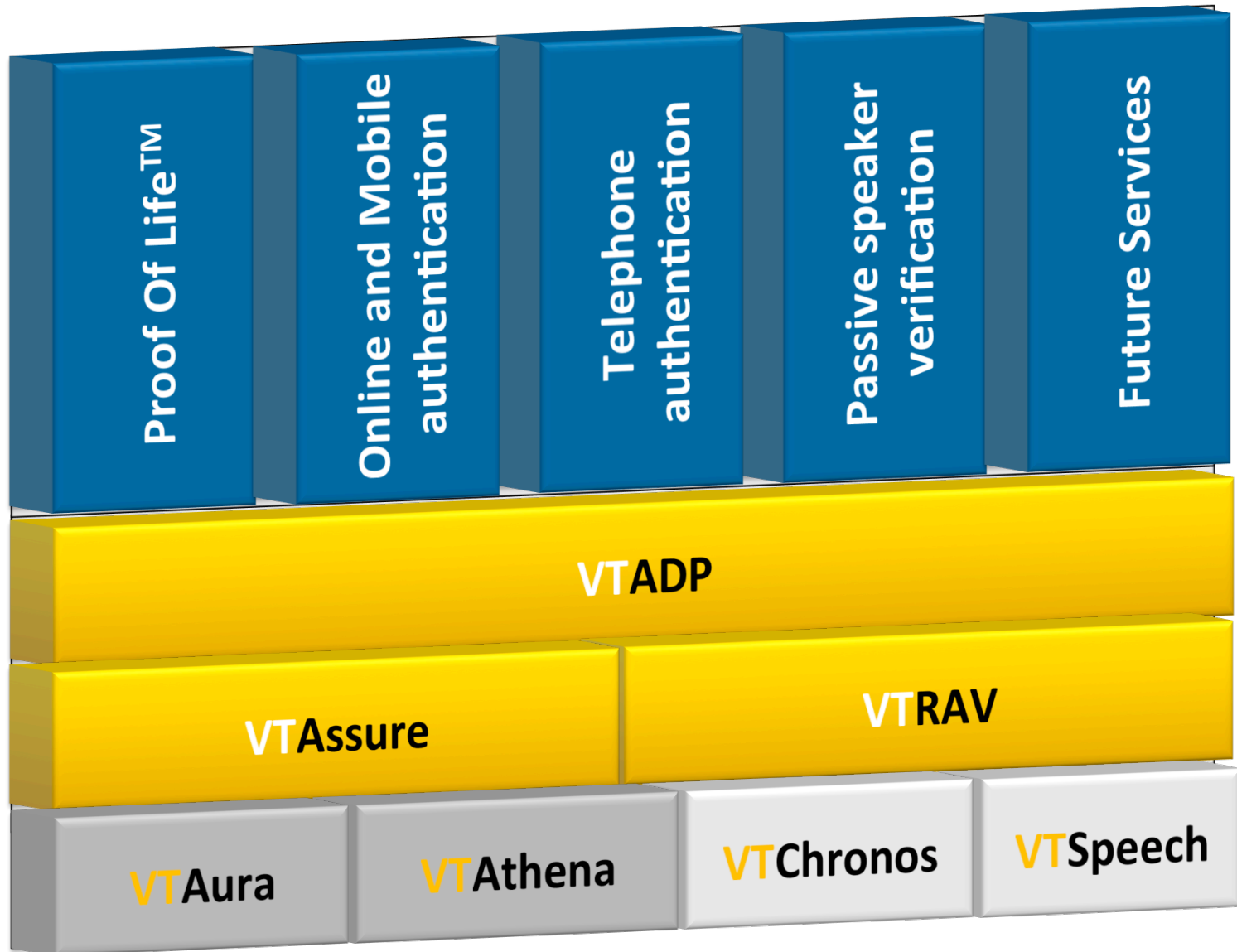
Add voice biometrics to the National ID registry

- Integrate an enrollment strategy and workflow
- Phase I: Voice biometrics authentication for
 - access to gov't services (mobile, online, telephone channels)
 - aid/disbursements/programs
- Phase II: Passive verification in the contact center
- Phase III: Future services

Challenges:

- Noise
- Channels (variability)
 - Citizens change/upgrade devices over time
 - Authentication across different channels
 - Mobile voice/data channels
 - Landline/Online/VoIP channels
 - On-premise
- Illnesses that impact the vocal tract
- Replay attack prevention (fraud)
- Geographically distributed infrastructure
- Scalability – handling a large number of concurrent requests at peak hours (e.g. e-voting)





VT**Aura**

Text Dependent

- For optimal authentication performance on dedicated channels

Text Prompted

- For optimal authentication performance with randomized keywords on dedicated channels

Text Independent

- Free form speech on dedicated channels

VTAura** Lite = Embedded VT**Aura****

VT**Athena**

Text Independent + language independent + channel independent

Ideal for

- *passive verification in the contact center*
- *identification (fraud list, positive list)*
- *fully random pass-phrases*

- Mobile** (Android, iOS, BlackBerry OS)
- Embedded Mobile*** (Android, iOS)
- Telephone**
- Online** (equipped with integrated microphones, external microphones/headsets)

Current National ID Project Status

- Project embraced by stakeholders
 - Central Bank
 - Directorate General of Income Taxes
 - Directorate General of National ID
 - Directorate General or Archives
- Preparing for Pilot
- Gathering information about infrastructure, detailed requirements, timelines, etc.
- Planning, designing and establishing milestone deliverables and launch

Benefits of National ID registry:

- Government benefits and programs
- Passport, Travel documents, licenses
- Educational Institution admission
- General enquiries
- Transaction authentication
- Future services

Benefits of voice biometrics in the National ID registry:

- Convenient:** ability to perform authentication remotely
- Simple:** authentication, enrollment
- Secure:** an additional layer of security
- Prevents Fraud**
- Cost effective:** No need for additional hardware infrastructure
- Efficient:** Citizens can vote from anywhere in the world (reduces voting station costs as well)