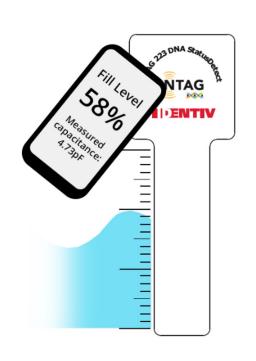


MAY 17 - 19, 2022

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RFID JOURNAL LIVE!



RFID Journal Award Finalist: Capacitive Fill Level Sensing Tag



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INTEGRATED CIRCUIT



SERVICE BUREAU







ANTENNA



CONVERTER

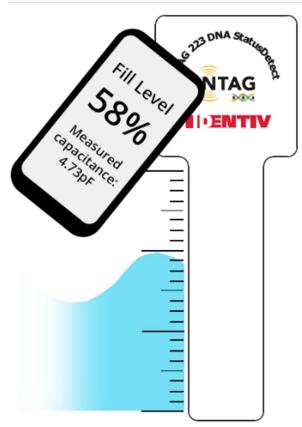




Capacitive Fill Level Sensing Simple Measurement with NFC

Provides a smart, simple, and single use solution to monitor fill levels:

- Easy read-out via NFC technology
- No separate sensor or special equipment required
- Simply attach label to a liquid-filled container
- Fill level is sensed by capacitance
- Minimizes unnecessary costs and time







Capacitive Fill Level Sensing Smart Containers and Cartridges

IoT use cases

- Sensing solution in healthcare and pharma, retail, smart packaging, supply chain control
- Securing solution for medications, beverages, and consumables
- Sensing consumables' fill-level with a reader, built into the main device in a closed-loop application
- Built-in AES CMAC functionality helps to verify the authenticity of the tagged product
- Flexible and adjustable in size and shape
- Calibration based on container type







Capacitive Fill Level Sensing Software Ecosystem

Authentication

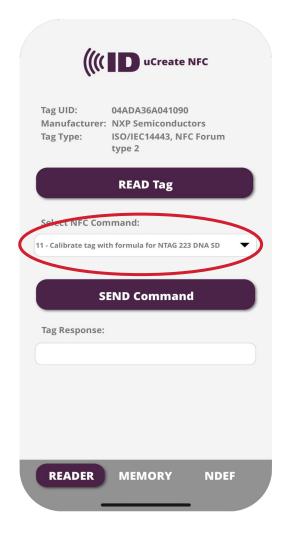
- HSM for secure key storage and key diversification
- Authentication web service for SUN message verification

Capacity Read-Out and Calibration

- Web service for fill level readout in cooperation with NXP
- Integration of readout and (re-)calibration commands into uCreate NFC App and uCreate Mobile SDK, in addition to upcoming uCreate Reader SDK
- Until then: Desktop GUI application for calibration and sensor value readout with Identiv 3700 F and 3720 F Smart Card Readers available

Reader Hardware

 Custom reader design for embedded applications (i.e., readers in device that read out sensor data on consumable)

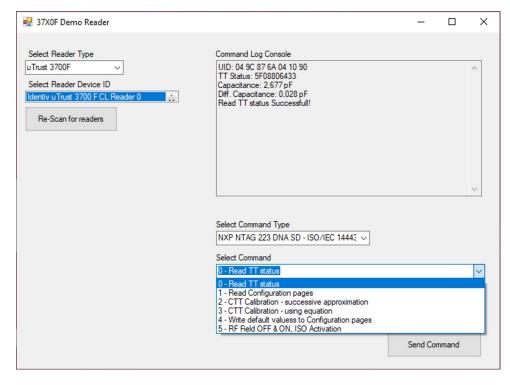




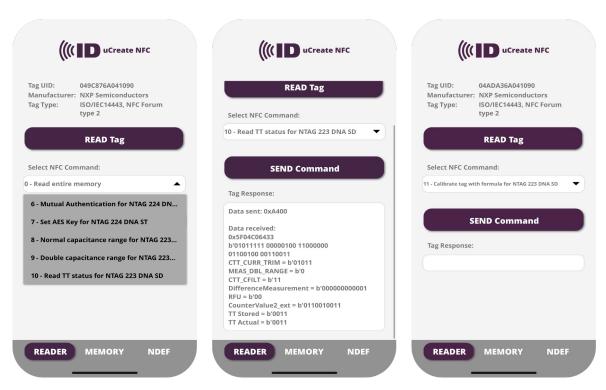


Capacitive Fill Level Sensing

Software Ecosystem



Desktop GUI Application



NTAG 22X DNA SD in Identiv uCreate NFC App

Capacitive Fill Level Sensing State-of-the-Art Chip Technology

NXP NTAG 22X DNA SD

Cryptographic Security

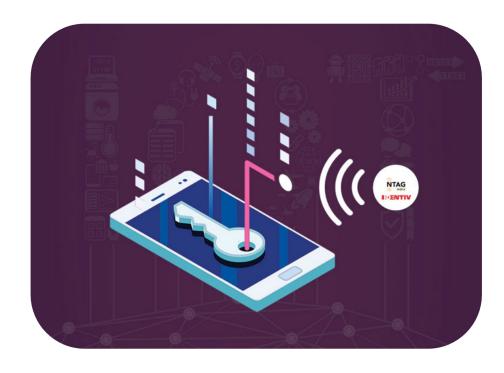
- SUN message authentication makes taps unclonable, no app required
- Mutual authentication using AES -128 to protect memory access

Dual-Mode Tamper Detection

- Conductive Tamper Detection (as known from NTAG213TT)
- Capacitive Tamper Detection (NEW!)

Simple Passive Sensing

- Ability to sense specific conditions without a battery
- Cost-efficient, easy to implement, and sustainable NFC solution







Capacitive Fill Level Sensing Smart Injectables

- Capacitive NFC tags for injectables
- Read-out via NFC if a dose was administered correctly or not
- Support for:
 - Clinical trials
 - Complex medication intake
 - Telemedicine applications
- Ideal for therapy monitoring and patient compliance monitoring





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Visit us at booth #417 for a demo!



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