

# Partnering Opportunity

Profile status : Published

## Research Development Request

### **H2020-EIC-FTI-2018-2020: Hungarian company developing, manufacturing and marketing retail security solutions is looking for a partner to carry out semiconductor development**

#### Summary

*A Hungarian manufacturer of retail security solutions is developing a novel theft prevention system for fashion retailers. The system is a Radio Frequency Identification (RFID) based Electronic Article Surveillance solution using a novel RFID chip concept. The company seeks a partner for under a proposal for the H2020 EIC-FTI-2018-2020 call to design and fabricate the custom RFID chip to be used in the system.*

<b>Creation Date</b>	28 August 2020
<b>Last Update</b>	04 September 2020
<b>Expiration Date</b>	07 October 2020
<b>Reference</b>	RDHU20200828001
<b>Public Link</b>	<a href="https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/1b2e114f-7f68-48a2-8c8e-cf64a4ce629f">https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/1b2e114f-7f68-48a2-8c8e-cf64a4ce629f</a>

#### Details

##### Description

The cost of global retail shrinkage, i.e. the loss of inventory, is almost \$250 billion annually, equivalent to 1.23% of retail sales. The main sources of shrinkage are dishonest employee theft (39%) and shoplifting (38%) – which means that effective anti-theft measures could reduce shrinkage by over 75%. According to the Global Retail Theft Barometer fashion retailers experience the second highest retail loss statistics globally, at a rate of 1.8%. The

most commonly stolen items are those which are easy to conceal, and include: footwear, fashion accessories, sports-related clothing, sunglasses, and handbags.

Retail stores employ various Electronic Article Surveillance (EAS) solutions trying to prevent theft. These solutions usually rely on radio frequency (RF) systems, with a special RF tag (basically a miniature, disposable electronic circuit and antenna) fixed to the product. These tags are removed or deactivated by the sales personnel when the item is properly purchased. At the exits of the store, a detection system sounds an alarm or otherwise alerts security staff when it senses an active tag that was not removed or deactivated during the payment.

#### The Opportunity

RFID is getting more and more popular in retail due to its advanced features that comes handy for logistics and stock management. In particular, mid-to-high-end fashion stores and chains tend to invest more and more into advanced technologies. However, considering merchandize security and shrinkage prevention, the capabilities of RFID are not properly utilized. Even though RFID technology is far more advanced than RF-based solutions, existing implementations of the technology do not offer any added value right now for Electronic Article Surveillance (EAS). Namely, RFID EAS pedestals can detect the item at the entrance, however, the true potentials is not utilized for loss-prevention.

The solution developed by the Hungarian SME aims to drastically reduce shoplifting by exploiting the full capabilities of advanced RFID technology. The proposed system is based on a novel, customized RFID chip (DetekTag technology) and has three main components: 1) DetekTag technology enabled security tag, 2) Customized RFID reader and antennas, 3) Software ecosystem.

The proposed modifications can be implemented without significant increase of the label/hardtag price thus becoming highly competitive with existing ones.

The planned project will build upon the SME Instrument Phase 1 project recently carried out by the coordinator company. The deadline for the targeted call (H2020-EIC-FTI-2018-2020) is 27 October 2020, but the call is expected to continue through 2021 in Horizon Europe.

The project will be carried out by a small consortia of 3 to 4 partners.

The partners sought is a company, university or research centre capable of semiconductor design and small scale fabrication of RFID chips.

Deadline for EOIs: 7 October 2020

## Advantages and innovations

This solution can significantly reduce the number of successful shoplifting attempts by detecting the illegal removal of tags from the clothes. No currently available system can offer this capability, which is based on a unique RFID technology.

The technology serves as an add-on system to any existing RFID-based EAS implementation, so customers may continue using their RFID security gates installed at the entrances.

Shoplifters circumvent Electronic Article Surveillance systems in two main ways: by removing the security tags from the article, or by hiding them in a booster bag that shields the radio signal. Both methods require one thing, privacy. What better place to get privacy in a retail store than a fitting room, where shoplifters can take their time to remove the electronic article surveillance tag. Thanks to this novel RFID chip concept, the technology enables live EAS tag and label monitoring in the fitting room area i.e the system generate alarm when someone tries to remove the tag.

Furthermore, as monitoring (reading) of the tags is continuous, the system also detects instantly when an article

is put in a booster bag and thus the radio signal is blocked.

### Stage of development

Under development/lab tested

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### Keywords

#### Technology

01002003

Electronic engineering

#### Market

07002002

Clothing and shoe stores

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### Network Contact

#### Issuing Partner

ZACHODNIOPOMORSKI UNIWERSYTET TECHNOLOGICZNY W SZCZECINIE

#### Contact Person

ZEBROWSKI Pawel

#### Phone number

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Open for EOI: **Yes**

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### Client

#### Type and Size of Organisation Behind the Profile

Industry SME <= 10

#### Year Established

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## Already Engaged in Trans-National Cooperation

Yes

## Languages Spoken

English  
Hungarian

## Client Country

Hungary

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## Partner Sought

### Type and Role of Partner Sought

- Type of partner sought: R&D Institution, university, industry
- Specific area of activity of the partner: Semiconductor design
- Task to be performed:  
The partner shall - based on available RFID semiconductor IPs -develop and fabricate in small scale an EPC (Electronic Product Code) gen2 compatible UHF (Ultra high frequency) RFID chip that can be used for the production of soft labels and hard tags; and enables similar reading performance like those already on market (Impinj Monza, Alien Higgs, etc.).

### Type of Partnership Considered

Research cooperation agreement

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## Program - Call

### Framework Program

H2020

### Call title and identifier

Fast Track to Innovation (FTI), EIC-FTI-2018-2020

### Submission and evaluation scheme

continuous submission scheme

### Coordinator required

No

**Deadline for EOI**

07 Oct 2020

**Deadline of the Call**

27 Oct 2020

**Weblink to the call**

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/eic-fti-2018-2020>

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**Attachments**

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