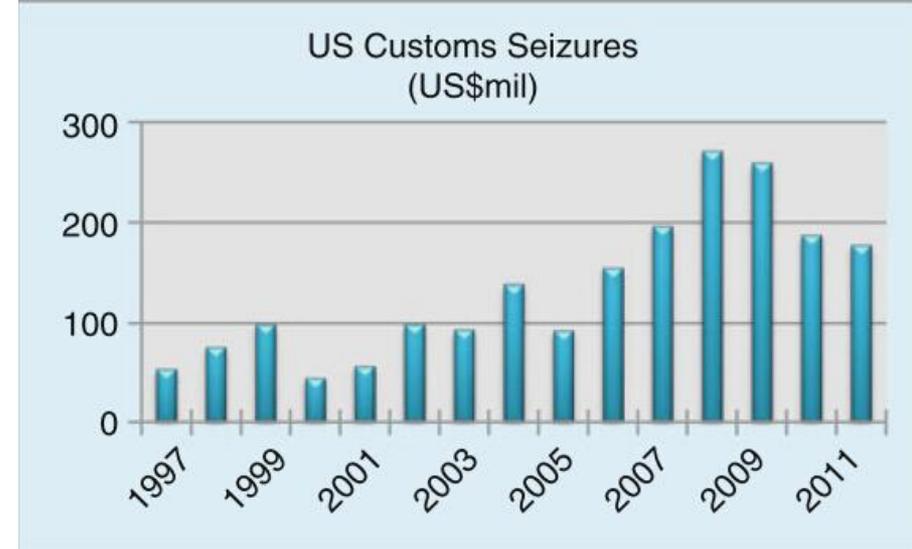# TAGIT
EAS TECHNOLOGIES

New Technology for Authentication

We have developed a new authentication method with our partners.

Thanks to Tagit's "fake beating" new technology, losses of government revenues from sales of counterfeit cigarettes and spirits are highly reduced.

Counterfeit market size

- In 2008, the US government estimated the global market value of the counterfeit industry at $500 billion with a growth rate of 1,7 percent over the past 10 years (U.S. Customs and Border Protection 2008).

- Out of the 250 Million litres of wine imported into Russia each year, an estimated 30 percent, or 75 Million litres, are believed to be fake.

- Counterfeit drugs made in Asia and other emerging markets are a growing problem, endangering consumers health and chipping away the companies profits. In 2009, nearly 1.700 incidents of counterfeit drugs were reported worldwide, triple the number in 2004, says the Pharmaceutical Security Institute (PSI), a group funded by drug makers. Estimates for the size of the counterfeit drug market range from $75 billion to $200 billion a year. The market is likely to be much bigger because many cases of such fraud are hard to detect.

- KPMG has estimated that in 2009 the counterfeit and contraband share of cigarette consumption in the EU was 8.9% based on an identical research methodology applied to each of the 27 member states. The European Commission estimates that the EU member states lose up to €10 billion in tax revenue a year as a result of the illicit trade in tobacco products.

US Customs Seizures (US$ million)
Source: US Customs and Border Protection (2011)

Commodity	Domestic value ($)	% of total
Consumer electronics	38,992,613	22
Footwear	25,562,613	14
Pharmaceuticals	16,848,192	9
Optical media	15,567,059	9
Wearing apparel	14,755,599	8
Perfume/cologne	9,456,208	5
Watches/parts	8,435,256	5
Cigarettes	8,183,993	5
Computers/hardware	7,814,457	4
Toys/electronic games	7,597,367	4
All other commodities	25,419,276	14
Total FY 2011 domestic value	178,322,633	
Number of seizures	24,792	

Source: US Customs and Border Protection

FY 2011 top IPR commodities seized

Current Product Authentication methods

- Taggant fingerprinting - uniquely coded microscopic materials that are verified from a database

- Encrypted micro-particles - unpredictably placed markings (numbers, layers and colors) not visible to the human eye

- Holograms - graphics printed on seals, patches, foils or labels and used at point of sale for visual verification

- UV printing - marks only visible under UV light

- Track and trace systems - use codes to link products to database tracking system

- Water indicators - become visible when contacted with water

- Color shifting ink or film - visible marks that switch colors or texture when tilted

One of these medicines is fake.
Can *you* tell which?

The negative effects of counterfeit goods can be reduced using all of these product authentication technologies. To provide better protection from fraudsters, new technologies are always being developed, which make it even more difficult for a fake product to escape detection.

Our new solution: Security paper / detector + detection system

- A wide range of security papers for tobacco stamps, alcohol banderols, medicine and other excise marks. These papers can contain different combinations of overt, covert and forensic security elements such as: watermark, fluorescent fibers, magnetic micro-wires, colored or holographic taggants, planchettes, ceramic markers, etc. Each combination is strictly confidential and exclusive for each application.

- A special combination including microwires only 15μm thick - three times thinner than a human hair and almost invisible - is used as an exclusively unique, and inimitable, magnetic marker for authentication.

- Based upon the "Lock and Key" principle: invisible, detectable and readable microwires imbedded in our secure paper provide a unique magnetic signature that is detected and identified, only with our handheld detectors.

- Detection system can be placed in the factory to prevent any worker from stealing the security paper/stamp.

Handheld detector

An example of successful application

One European country has used our technology for several years. In this case, taxation revenues were effectively enhanced using excise stamps containing pieces of magnetic microwire to detect fake cigarettes and spirits.

<u>Descriptions of the application</u>

- We supply the special paper (containing security elements including soft magnetic microwires) to the government authorized printing house

- The package of paper can be customized to suit client requirements

- The authorized printing house produces the government tax stamps and alcohol banderols from the security paper

- Importers/producers of cigarettes/wines buy the tax stamps/alcohol banderols from government and stick them on their products. The price of these paper includes the appropriate tax

- A government tax officer, policeman or representative of the authentic producer can visit any warehouse or shop with handheld detectors - to check if the product is untaxed/fake or taxed/original

About the Applications:

Reduce government revenue losses due to sales of fake products

- Collection of tax using security stamp is now adopted by more and more governments which can reduce the revenue losses due to sales of fake products

- Different countries may use security stamps with different security elements

- Security stamps with soft magnetic microwires is an advanced technology that make the fake protection highly efficient

- Before all products can be sold, they have to be registered in the finance administration. Then they will be informed about their rights and obligations. It is necessary to buy the stamps, pay for taxes and put the stamps on each product

- It is illegal and not allowed to be sold without this stamp

Advantages of the new solution

- Combined with different security elements, the new soft magnetic microwire makes the security stamps impossible to forge

- Each combination of security elements is strictly confidential and exclusive for each application

- Easy to execute - it is easy to identify the security stamp with a small handheld detector