

Issue 2 (March 2019)



**PEN-CP**

Pan-European Network of  
Customs Practitioners

# MAGAZINE

Innovation is everyone's responsibility -  
Not just R&D's

-Albert Einstein

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## Dear PEN-CP Magazine Readers

On behalf of the PEN-CP Management Team and Consortium, it is a pleasure to share with you the latest updates with our 5-year Pan-European Network on Customs Practitioners project. A lot has happened during the past three months, since PEN-CP Magazine Issue 1 was published.

The single most important progress deals with the configuration and testing of the PEN-CP Customs user need and innovation monitoring and boosting platform. The work flows and (input) data elements have been now finalized for the PEN-CP Information Observatory (PIO); User Need Ideas (PUNI); Security Innovation Monitoring (PSIM); as well as Innovation Funnel (PIF) – we present these with more details on pages 3-7 of this Magazine Issue 2.

On PEN-CP Annual Study front, we have fixed now three topics/ chapters covering PEN-CP security themes of Big data and risk management and Customs security performance measurement (see page 8). Regarding education and training materials, first two actions have started: one on operational training for seal controls; and another one on AEO program benefits for companies in cross-border supply chains (see page 9). On project dissemination, one of the key actions focused on producing a short overview video on the project – you find the weblink to this video on the back page of this Magazine.

Then, a great pleasure to announce that the PEN-CP Year 1 Annual Event will take place in Budapest, Hungary, on 20-22 November 2019. The event will be rich in interactive sessions with all partners, plus couple of external experts, particularly in the form of panels and breakout sessions – hope to see all partners in Budapest in November!

Finally, we hope that you enjoy reading the PEN-CP Magazine – and as usual, please do not hesitate to send comments and suggestions to us, [pen-cp@cross-border.org](mailto:pen-cp@cross-border.org)

In Thun, 1.3.2019,

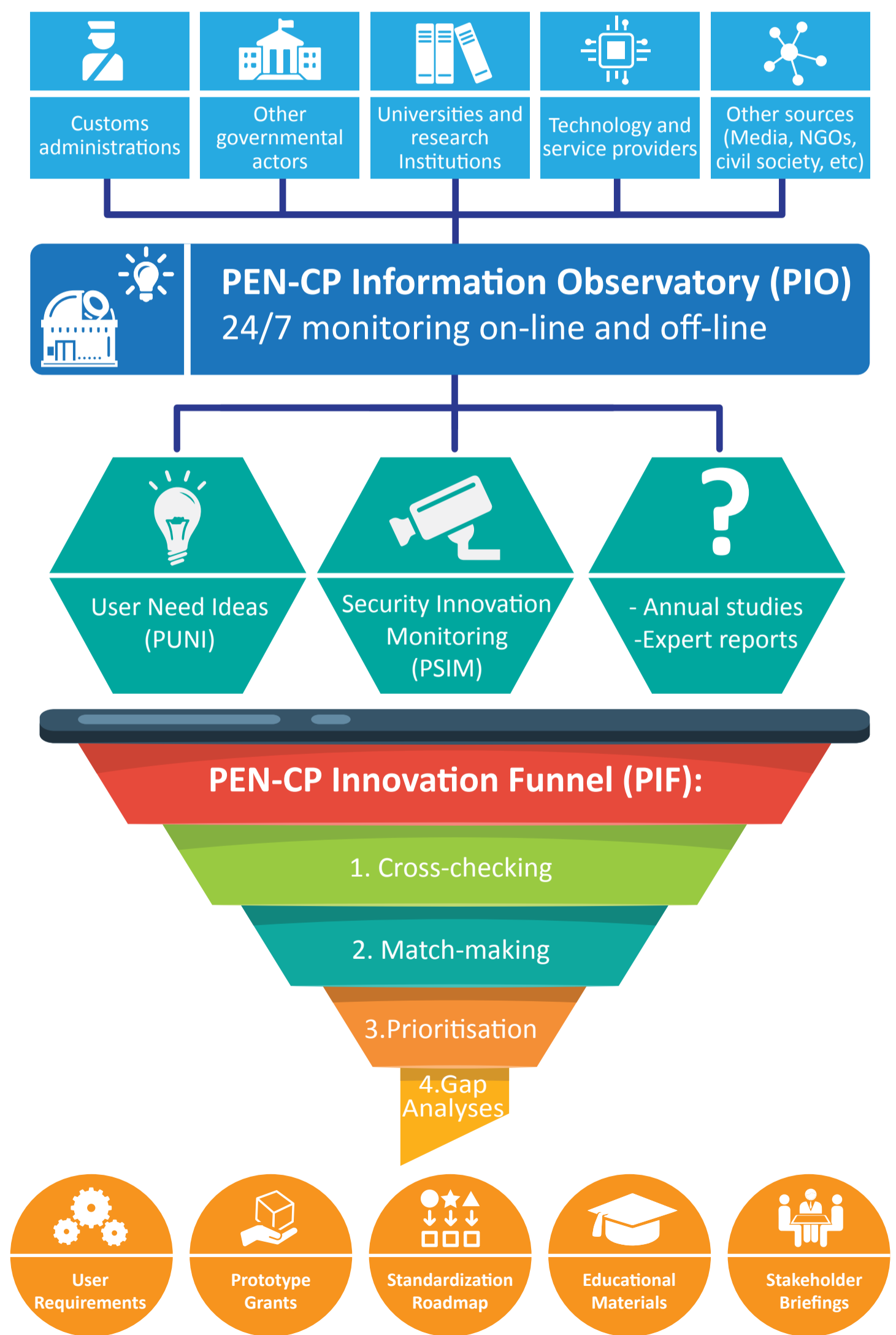
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# PEN-CP Information Observatory (PIO)

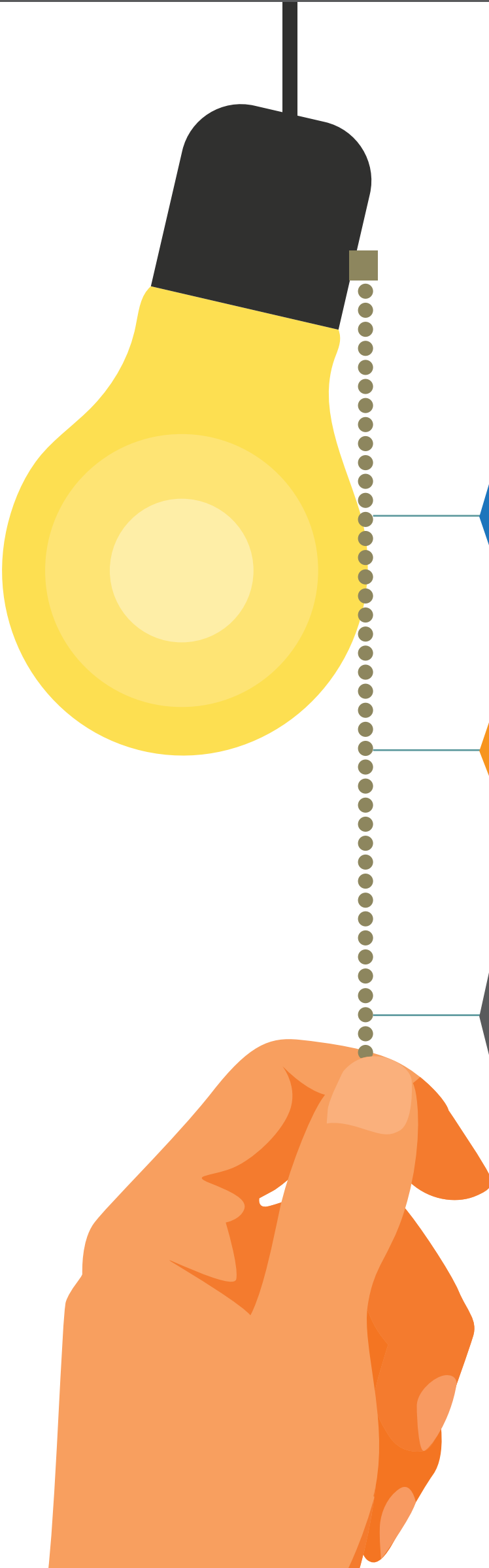
PEN-CP Information Observatory, PIO, takes care of continuous monitoring on customs security related news, announcements, projects, product releases, patent databases, companies, research institutions and more. PIO works both in virtual world and in physical world – with the former by focusing for example on select news portals, social media, governmental and company websites; and with the latter by participating for example in key conferences, trade fairs, and start-up networking events. For each item stored in the Information Observatory, the PEN-CP Management Team analyses further whether there is an emerging user need idea (embedded for example in the news), or, a security innovation item (solution, patent, project, institution) calling for further analysis and monitoring. Examples of PIO items can be found on News section of Magazine 2, and on pages 6-9 and 12-15 in Magazine 1.



# ➤ PEN-CP User Need Ideas (PUNIs)

PEN-CP User Need Ideas, PUNIs, are all about the challenges that Customs are facing - or, expecting to face in the future - in both operational and managerial work. The purpose of collecting the PUNIs/ challenges is to facilitate problem-solving by following two ways: (i) by matching the collected PUNIs/ challenges with the Security Innovation Monitoring items (PSIMs) stored in the on-line platform; and (ii) by collecting solution ideas across the PEN-CP partnership – and, from innovators outside the consortium. We are open for both “incremental” and for “radical” solution ideas – in former case, current solution features are improved or new features are added to existing solutions; and, in latter case, completely new ways to solve Customs challenges are introduced/ invented. To illustrate the PUNI-concept in practice, three real examples (headers) of current PUNIs on the PEN-CP Online Platform (POP) are shared below.

## Examples of Real PUNIs/ Challenges (headlines only)



**1 Screening and detection of illicit items in postal supply chain at flow of commerce** (There is a lack of technology which can adequately screen for drugs and threats at belt speed, making manual intervention necessary).



**2 New Psychoactive Substances access to updated spectra** (Lack of updated spectra on new psychoactive substances. Looking for mechanism to get central data onto different users systems).



**3 Flexible access to pan-European tenders** (Tenders can be a lengthy process for customs administrations and a lot of effort if they only require small numbers of equipment. Sometimes funding presents itself towards the end of financial year and customs cannot make use of it because they do not have sufficient time to run a tender).



As of March 2019, all PEN-CP Customs partners are encouraged to start entering large numbers of PUNIs on the PEN-CP Online Platform (POP)! You can contact [susana.wongchan@unil.ch](mailto:susana.wongchan@unil.ch) for instant user support.

# ➤ PEN-CP Security Innovation Monitoring items (PSIMs)

The PEN-CP Security Innovation Monitoring, PSIM, keeps track of solutions, patents, projects and institutions that are related to Customs security – covering interesting developments also in police, border guard, forensics and similar domains. First, when it comes to monitoring customs security Solutions, the purpose is threefold: (i) to facilitate match-making between User Need Ideas (PUNIs) versus existing Solutions in the markets (= instant problem solving); (ii) to

share user experiences (and technical test -datasheets) between two or more PEN-CP Customs administrations (and even broader across EU28); and (iii) to identify promising solutions/ technologies/ services which are not yet ready for Customs use, but which possibly could - after further development or tailoring – be used to solve Customs challenges in the future. Below we share examples on two **Solution-PSIM** headlines, currently stored on the PEN-CP Online Platform (POP):

## PSIM 1

Hand-held backscatter x-ray  
(Battery-powered backscatter x-ray  
allowing screening of specific areas in  
car searches, aircraft, parcels).

## PSIM 2

Portable GC for fuel fraud (To detect  
new chemical marker being used to  
mark rebated fuel).

The next two categories of PSIMs, i.e. **Patents and Projects**, can be used for two main purposes: (i) to match-make with the PUNIs/ Customs challenges – “let me know if there are existing Patents and/or Projects which deal with the PUNI I just entered”; and (ii) to learn about latest developments and to become inspired by the existing pool of Patents and/or

Projects, for example by browsing through them say every three or six months. In addition, both Patents and Projects can sometimes be linked to Solutions in the PSIM database, which also can prove to be useful information for the PEN-CP Customs partners. Below we share one example on each (headline), from the current PSIM database:

## PSIM 3

Patent on Low Dose Radiographic Imaging system (Inventors: LANGEVELD WILLEM GERHARDUS JOHANNES [US]; BENDAHAN JOSEPH [US]; GOZANI TSAHI [US]; KING MICHAEL [US]; STRELLIS DAN [US]; FRANCO EDWARD [US]; ALFONSO KRYSTAL R [US])

## PSIM 4

PROFILE-project (Full name: Data Analytics, Data Sources, and Architecture for Upgraded European Customs Risk Management; H2020)

The fourth category of PSIMs is **Institutions**, which cover a broad range of relevant organizations including companies (start-ups, scale-ups, large enterprises etc.), research institutes, university departments, governmental agencies, and more. Typically, each Solution and Project, and often also Patents, are linked to the main Institution behind them. There are three main purposes to include Institutions in the PSIM database: (i) if interested in a particular Solution or Project (or, a Patent), the platform user knows who she/he can contact to gain more information; (ii) when

organizing calls for Prototype grants, NewView grants, Expert reports, Hackathons, Crowdsourcing and similar PEN-CP activities (and also when just organizing webinars, breakfast meetings and networking events), the administrators (from PEN-CP) know who they can approach; and (iii) if a platform user simply wants to be inspired by or to educate her/himself on institutions working on topics close to the user interest, she/he can easily learn more about them by browsing through the database.

# ➤ PEN-CP Innovation Funnel (PIF)

The complete process where all PUNIs and PSIMs are finally formulated, the data entered, cross-checking and match-making done, and prioritizations conducted is called the PEN-CP Innovation Funnel, PIF. Let's look at first the PUNI-side of the PIF-funnel, followed then by the PSIM-side of the Funnel.

## PEN-CP Innovation Funnel – PUNI-side

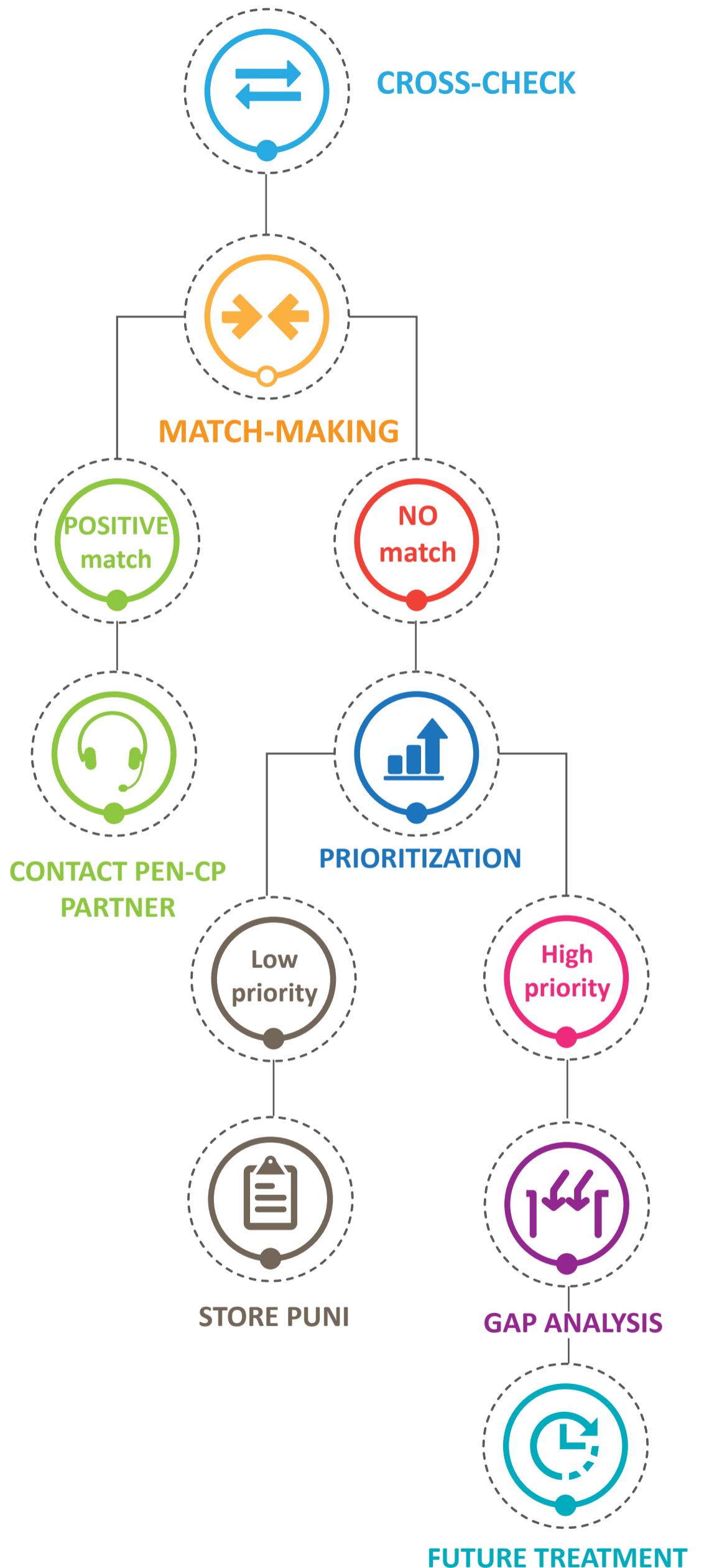
**Step 1.** Once a new PUNI has been entered, **cross-check** if there are similar PUNIs already in the database. If yes, contact the partners behind the two (or more) PUNIs, and find a best way to merge the PUNIs into one.

**Step 2.** Carry out **match-making** with the new PUNI versus all innovation monitoring items in the PSIM database. If there is a (promising) match, **contact the partner behind the PUNI**, to explore options for next steps (might be e.g. contacting the institution behind the matching PSIM, to ask for more information etc.)

**Step 3.** In case there is **no match** between the PUNI and any of the PSIMs, **organize a voting (prioritization poll)** with all partners regarding the perceived importance/relevance of the PUNI for their administration. The **higher the voting score**, the more priority the PUNI will be given regarding future treatments.

**Step 4.** Conduct a detailed **gap analysis** regarding each high priority PUNI, by comparing them on what already exists in the markets and/or what is currently maturing in research and development projects. Depending on the outcomes of the Step 4, consider which future treatment actions would make most sense (Step 5).

**Step 5. Future treatments** of high priority PUNIs may include one or more of the following: (i) using the PUNI as a basis for a Prototype grant call; (i) feeding the PUNI into the Standardization roadmap; (iii) developing Education and training materials based on the PUNI; (iv) feeding into Security research and customs policy discussions, particularly towards DG HOME and DG TAXUD; or, (v) producing a Detailed user requirement/ functional requirement document around the PUNI, to be used e.g. in future commercial tenders.



- Prototype grant
- Standardization roadmap
- Educational materials
- Stakeholder briefings
- User requirement document

# PEN-CP Innovation Funnel – PSIM-side

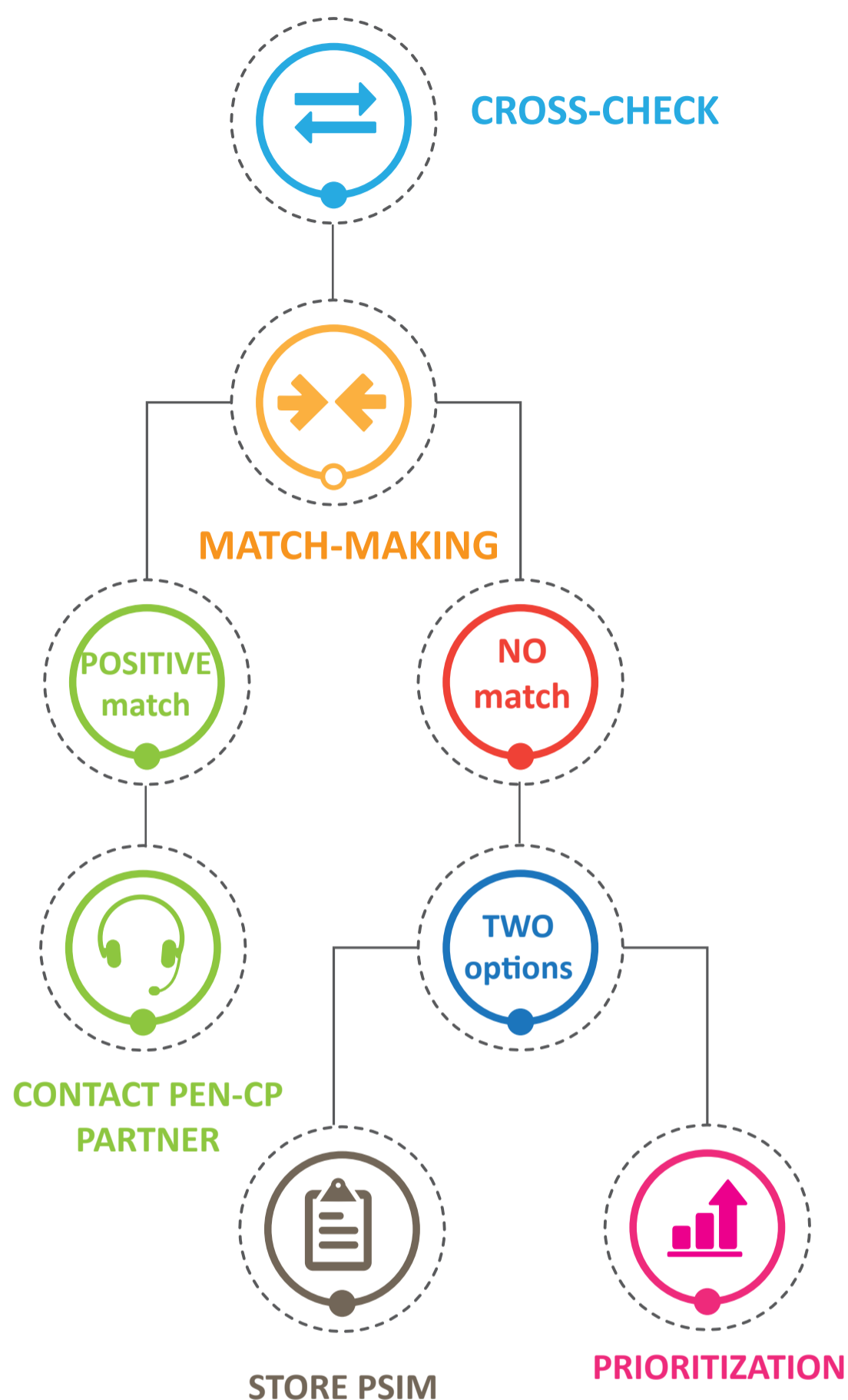
**Step 1.** Once a new PSIM has been entered, **cross-check** if there are similar PSIMs already in the database – in particular if a Solution links to a Project or to a Patent. If matches found, insert appropriate (URL) links as part of the PSIM record. If there are very similar Solutions by multiple vendors, we can also record a note on that.

**Step 2.** Carry out **match-making** with the new PSIM versus all User Need Ideas/ Customs Challenges in the PUNI database. If there is a (promising) match, **contact the partner behind the matching PUNI**, to explore options for next steps (might be e.g. contacting the institution behind the new PSIM, to ask for more information etc.)

**Step 3.** In case there is **no (instant) match** between the PSIM and any of the PUNIs, we still **store and keep each PSIM in the database**, as future PUNIs may have a match with one or more PSIMs. We can also opt to organize a **consortium-wide voting (prioritization)** with those PSIMs where the PEN-CP Management Team sees interesting potential. Specifically, we may ask partners to choose one of the following options (in the voting):

- Very interesting PSIM, my administration wants to talk with other interested administrations;
- Promising PSIM, keep my administration updated on any new information;
- Come back to us in 12-month time about this PSIM, so we can re-evaluate our interest;
- This PSIM is not interesting for our administration.

Of course, the options in the priority-voting may be tailored per type of PSIM.



# ➤ Research on big data, risk management and security performance measurement

The writing team warmly welcomes customs experts to share their views on the chapter themes, and to provide important inputs for the study chapters!

**The first PEN-CP annual study chapters focus on big data, risk management and security performance measurement. The big data research showcases real-world examples on how different law enforcement organizations and disciplines have exploited new data sources and analytics to improve their performance. Two chapters on customs security performance measurement highlight the value of data analytics in customs processes and propose a way to rethink benefits of the customs service from the society's standpoint. Writing of the three chapters started in January, and the outcomes will be published in September and discussed in the year one PEN-CP annual event, in Budapest November 2019..**

## **Big data for fraud and crime detection**

The first annual study chapter focuses on the digital transformation of customs risk management and the increasing reliance of customs enforcement on timely, reliable and complete data. The study offers a handful of examples and use cases that illustrate benefits and challenges of big data solutions for fighting fraud, organised crime, terrorism and trafficking of human beings. Besides real-world examples, the writing team has so far discovered potential organisations and projects that seem to have useful data for customs risk assessment in the future, such as Business Alliance for Secure Commerce (BASC), International Air Transport Association (IATA), Tradelens and Portbase. The study chapter builds on a systematic review of relevant reports, research papers and projects as well as complementary interviews with PEN-CP customs experts.

## **Understanding the value of data analytics in the customs process**

The second chapter discusses the concept of “value analysis of data analytics innovation for customs compliance” that will enable customs administrations and policymakers to better understand the benefits and constraints of using data analytics for various customs processes. The new concept sheds light on the use of a specific IT innovations, especially big data analytics, building upon insights and examples of parallel EU customs projects like PROFILE ([www.profile-project.eu](http://www.profile-project.eu)). The research also contributes to the deeper understanding of how data analytics innovations help address fundamental questions of customs performance, like where in the process to focus data analytics efforts to achieve higher hit rate and lower rate of false positives.

## **Customs True Societal Protection Index**

The third chapter introduces the Customs True Societal Protection Performance index, which measures effectiveness and efficiency of customs controls at borders from the society's standpoint. The index is underpinned by two questions: (1) How much contraband bypasses customs controls? and (2) What is the impact of customs controls to the society? The research also discusses circumstantial, or indirect, evidence, such as street prices of illegal drugs and drug residual analyses on sewage water, that help customs to estimate effects of their enforcement work. The study features illustrative case studies that focus, among other prohibited or restricted commodities, on cocaine and illicit cigarettes.

# ➤ PEN-CP embarks on production of training material

The production of PEN-CP education and training material moves ahead. Cargo seals and Authorized Economic Operator (AEO) programs are the two themes to focus on over the next three months.

## Training material on container seals

The variety of container seals have increased over the past decade, and dealing with different seal types has become a daily trouble for many frontline customs officers. The first set of PEN-CP training material summarizes the latest information on container seals and best practices for dealing with them in sea ports and at other border crossings. The training material on seals was requested by training specialists of the Customs Eastern and South-eastern Land Border Expert Team (CELBET), one of the European Customs 2020 expert groups. The PEN-CP team is pleased to accept the request and produce compact online-based self-learning modules on the theme, which will feature videos, photos, case examples, presentations and quizzes. The modules will complement the existing training materials on cargo seals that has been already published at the global, EU and/or national levels. The subject matter expertise required to produce such training modules will be provided mainly by Hungarian and Slovakian customs; and of course, all other PEN-CP customs partners are welcome to provide inputs. Partners University of Lausanne (UNIL) and Cross-border Research Association (CBRA) will be responsible for the detailed design and production process of the final training product. Over the next months, this team will invite key customs and industry experts to share their experiences and views on modern container seals and seal management.

## Macedonian translation of the PEN-CP animation “Benefits for AEO-Certified Companies”

PEN-CP partners have published educational animations on various customs and supply chain security themes in the past. The animations are currently available in English and in some cases in Spanish. The Macedonian Customs, one of the thirteen PEN-CP customs partners, has requested that the “Benefits for AEO-Certified Companies” animation to be translated into Macedonian language. The animation illustrates actual and potential benefits that AEO certifications can bring to companies. The Macedonian edition of the AEO animation will be produced by University of Lausanne (UNIL) in close cooperation with the Macedonian Customs and Cross-border Research Association (CBRA).

To watch the English version of the video, click the following link:

[https://www.youtube.com/watch?v=Xlf-AjgLy\\_U&](https://www.youtube.com/watch?v=Xlf-AjgLy_U&)



# ➤ PEN-CP Interview with Anthony Barone

What can the active professionals in the PEN-CP Network learn from an expert with long and broad experience of the supply chain, of customs services and of how technology has changed the play? PEN-CP Magazine contacted Anthony Barone, a long-time industry expert, in order for the network to be able to benefit from his advise. Here is what he told us:

**PEN-CP MAGAZINE: Hi Tony, and thanks for joining the PEN-CP Magazine interview! Can you first tell us a bit about yourself and your extensive background in global supply chain and customs disciplines?**

**AB:** First, thank you very much for inviting me to comment and congratulations on PEN-CP. I think this entity can serve an extremely useful purpose bringing together professionals with a wide range of experience on very complex matters. This is important because I can think of nothing less constructive than echo chambers as is often the case at even the most prestigious international bodies. The broader the mix of DNA, the better will be the end product.

As for my background, it is pretty broad and goes back a long way. I recall one of my earliest jobs was with a food company that manufactured cheese in the middle of the United States. As you know, cheese is temperature sensitive. We shipped on pallets in refrigerated railroad cars to the docks on the East Coast, then lifted this aboard freighters into cool rooms through open hatches.

Inbound cargoes similarly moved break-bulk and you can well imagine how much freight was lost to theft. One of the problems this caused was that by the time the loss was discovered we had already run down to the customs house with a check to clear the goods. Thus we paid duty on behalf of the pilferers.

Containerization has changed all that. I suppose it's cliché to point to containerization as disruptive innovation, but having lived through it, I know what the term really means and it is not marginal improvement of a process.

Professionally, I spent about half of my career as a logistics service provider and about half as a shipper of goods. The other half was doing things like working as an in country logistics advisor in Asian countries to

field medical clinics. And I provided support as a content expert to software companies. I finally served as an adjunct professor of supply chain studies at the State University (of New Jersey). I imagine one or more of my students may be reading this. It was a long and tremendously interesting career. Now I write plays for the stage.

**PEN-CP MAG: As we explained to you before this interview, PEN-CP project is all about new ways of linking Customs needs and challenges to the broad innovation sector out there. What are the first thoughts that came to your mind after learning about the project? And what kind of advise would you give to our PEN-CP project – or, network – to become as relevant as possible?**

**AB:** You are asking two challenging and, to me, related questions. What I first thought of PEN-CP and what advice I would give regarding innovation. I am reluctant to give a sound bite response because I do not think that is possible. I spent a lot of time grappling with the matter of innovation in private industry and at advisory capacities at the WCO, the ICC and at the US Customs Advisory Group known as COAC. I came to the conclusion that really significant innovation, especially in border management, requires at least two pre-conditions.

The first is the arms length detachment of the politicians or senior executives that appropriate the money for process improvements for day to day operations. In other words “executive drivers” must not have a personal stake in the status quo or innovation will fail. Instead, they must see the current system as flawed and believe the people owning the process unable or unwilling to change.

Let me expound on the meaning of “personal stake.” This can be economic or non-economic. Putting corruption aside, economic dedication to the existing

process may derive from a political aversion to the projected cost of innovation especially when other opportunities of potentially greater reward exist. Non-economic personal stake may include an individual attachment to a way of doing business, pride of authorship or even actual ownership of the process itself. It's common knowledge that the "expert" that owns a process also has significant organizational power and power is not easily given up. These are all obstacles to innovation. Why take a risk?

I mentioned two pre-conditions. The other is the opportunity for someone to substantially benefit, financially. There needs to be a financial incentive to radical change. Tea money aside, in most countries customs revenue flows to the state, not to individuals. There is no profit incentive to innovate. In those countries where a reward or bounty is paid to customs officers for discovering fraud or criminality, innovation may actually threaten an income stream. Change means risk. Why change?

Given the essential function of border management is fiduciary, profit motivation must necessarily be encouraged outside the organization. This is what often happens today. Private developers offer innovative service for a fee but that sub-optimizes the solution because the tools have no other purpose than some narrowly defined function. Cheese merchants do not need container x-ray or drug sniffing capability.

Disruptive modernization needs to be conceived at a much higher strategic level. To me that means innovation that substantially benefits multiple stakeholders simultaneously.

Consider the tremendous advances in modern consumer logistics. I can order a laptop from a supplier a continent away through my smart phone and have it delivered tomorrow before lunch. The beneficiaries of these technological and logistical developments are numerous including the distribution requirement planning (DRP), material requirements planning (MRP) and financial systems of both the seller and buyer and the scheduling, planning and accounts of the various logistics service providers (LSP's) involved in the value chain. The point is the more backward, forward and sideways integration occurs the more all the partners benefit. Each advance along the way to today and further into tomorrow happen because someone made or will make money.

If border management were an integrated part of that ecosystem all the parties would have all the relevant details of transactions.

I can think of a thousand objections to this kind of thinking but suggest that all derive from the obstacles to innovation I mentioned at the outset - personal stake in the status quo and lack of profit incentive.

I've argued since bitcoin emerged that the blockchain idea holds the key to accomplishing the integration of private supply chain and governmental applications. The distributed data capability and security of the ledger system, with each partner accessing only that part of the string needed, is perfect for global security and fiduciary purposes. Will it happen? Eventually something like this will unless some other technology or trade philosophy (like open borders) doesn't happen first.

**PEN-CP Mag: We also noticed an interesting LinkedIn posting about customs innovation approaches by you a few months ago: there was something about "cars were not invented by the horse wagon businesses..." Could you reflect on what you wrote about and why?**

**AB:** My comment on LinkedIn was that "cars were not invented by the makers of horse drawn carriages." I think the foregoing explains why I say that and why I think your approach has merit. Bring to the table as wide a variety of thinkers as possible. Not just subject matter experts. Subject matter experts are invested in the status quo and can tell you all about how things are done but not necessarily how they can be done, which is, after all, what innovation is all about.

**PEN-CP Mag: Thanks a lot Tony for sharing these fabulous insights! And, we would like to follow-up with you on some further discussions, once PEN-CP has progressed bit further...!**



# ➤ PEN-CP Interview Kevin Humphreys, Office of Revenue Commissioners, Ireland



Following up on the interviews from the PEN-CP Kick-off, presented in the first PEN-CP Magazine, we wanted to know more of the participants' views and motivations for participating in the project. We reached out to Kevin Humphreys at the Irish Office of Revenue Commissioners, and Jonathan Migeotte at the Belgium Customs and Excises administration. Below you find their views.

## **PEN –CP Magazine: Which organisation do you represent and what is your role there?**

**Kevin:** I represent the Office of Revenue Commissioners. We deal with all the taxes in Ireland, and all the customs as well. I am attached to the customs area of the Revenue Commissioners. I have been in my role since 2014, before that I worked in Taxes and then I joined the Customs, and it's mainly in procurement, buying new technologies, new machines and making sure the relevant licences are held. You have to follow procurement guidelines when handling new systems.

Since 2014 I have acquired some more systems and I have replaced some. Another part of my job is with the EU-side of things. 2016 I joined the Customs Detections Technology Project Group, a Customs 2020 project, you know which Trevor (Francis, UK Home Office, see interview in first issue of the PEN-CP Magazine) is member of as well. 15 EU countries are members, 16 experts are meeting, one of them being Wil (van Heeswijk), who is the chairman of the group from DG TAXUD. So I have been a member of that group for maybe three years now. That group's remit expires in 2020. It will probably be renewed and that is sort of key appointment of mine.

## **PEN-CP-MAG: When and how did you learn about PEN-CP?**

**Kevin:** I think it was Trevor that told me. He informally mentioned that the call was going on, so I actually found out about PEN-CP and PROFILE projects together. I knew I would be interested in PEN-CP because it seemed like it was going to take some of what the Customs Detection Technology Project group (CDTPG) was doing and expand on it. PROFILE would then have been more for IT-people, so myself and a guy representing the IT department went over to Brussels in spring 2017 and had a meeting with Juha (Hintsä, CBRA), and it started from there really. I went back to my boss and he gave great support and we thought it would be beneficial for a small country like Ireland, being involved in a network like this.

I had been on the CDTPG since 2016 and I knew Trevor from our meetings there and I think Trevor mentioned it to me at

some point and said it would be good. And at Revenue we have a history of participating in these projects. We were involved in a few FP7 projects, which was the predecessor of Horizon2020, so our organisation has positive experience of these projects. (ultimately, due to resource constraints, the administration was not able to join the PROFILE-project, but opted to focus on PEN-CP).

## **PEN-CP-MAG: Well you have partly touched upon that it would be a good idea to be in a European network, but why specifically did your organisation decide that it was a good idea to join this particular project?**

**Kevin:** I suppose going forward we feel need for greater networking in terms of sharing of data, sharing of information to do with procurement, sharing of information that is under administration school-brain about new technology. So, for us, it's about avoiding to reinvent the wheel, we want to leverage the experiences of larger nations that have big customs agencies, including the Netherlands and the UK. We got to leverage their experience and use it to build an effective customs agency. You know one that is in touch with new technologies and new ideas about sharing of data and stuff like that, that is the key reason. Because we are a small agency and it is really only myself, and my boss, and maybe two or three assistants, who kind of do all the detections procurement. When you look at a big country like the Netherlands, they might have 20-30 people involved in such a thing. That is what it is like, that is one of the key reasons. And then the second reason would be that we have good experience with previous collaborations.

## **PEN-CP-MAG: Are there innovations or technologies that your organisation uses today that you did not have access to 5 years ago?**

**Kevin:** Well yes, I joined in 2014 so that is five years now, so that is a handy time period for me to look at. I would say from the technology side that we have brought in back-scatter technology. I was over in Boston last month and it was the first back-scatter machine that we bought from them. We were testing it over there, doing a factory acceptance test, as it is called. It will be delivered in time for Christmas. That is a new technology and it is deployed in other EU countries. Italy,

Spain and the Netherlands were the first to deploy this, they have two or three systems. So that is a new technology that we just got this year and that is in parts funded by OLAF. Then last year we also got a Mini Z which again is a back-scatter handheld technology. So, these technologies are brand new for our customs agency. And part of the reason they were approved internally was that we had information from other agencies that they were effective.

**PEN-CP MAG: And has it been a long process to find them and to be able to make a decision to use them?**

**Kevin:** The back-scatter van that we are getting delivery of in December, we probably started the process about two years ago, so it was a year trying to get the money approved and then there was the tie in, applying for the grants from OLAF. Then we had to put the order in and it takes about six months to build a machine, so yes it was a long time line for a project. If you get authorisation straight away, you are still looking at a year, because you have to tender for them as well. So everything requires statutory time limits. I would say probably two years. I had to write a business case and the board was still not convinced of the merits of the system, so we actually got a lend of a system. They came over from the UK, from their factory there, and we had a trial of it. Trying out new systems, that all takes time. And building networks like the PEN-CP makes that much easier.

**PEN-CP-MAG: What technologies or innovations are you hoping to have in 5 years time thanks to PEN-CP?**

**Kevin:** A thing PEN-CP could really do for us is connected to our profiling centre. We have a national profiling centre and that is actually a quite recent development, it is just the last five years. We have always done profiling, considering it to be very important. The idea of profiling is to use the information that you have to select your target in a more careful fashion. The national profiling centre gets data from other administrations and I think that could be caught on a more formalised basis than the ad-hoc way in which that it is done now. If we could have better sharing of x-ray images for example, more efficient systems to share data, that would be excellent. It could be something like BAXE project (deals with x-ray image exchange between multiple EU customs administrations) that we are working on, so that could be rolled out to the whole union, that would be a massive improvement.

Then also the other side of that is better standardisation and kind of connecting to that as well, because I think the big problem with sharing imaging is having a standard format. We all have similar equipment now, all the agencies, so to introduce good standards that the industry providers have to abide by, and care about, in order to win the contract, that would be a good area to work on. And my work package is going to be focused on standardisation.

So a lot of work to be done there and beside that my main focus will also be to build the network. Already in Switzerland

(in the PEN-CP kick-off meeting in Thun) I met some people, like the Norwegian guys Hans Wilhelmsen and Tor Fredriksen, and I was able to contact them after our meeting and talk about the x-ray machines that they use in Oslo airport. Since I am doing the tender at the moment it is great to have that informal network where you can just contact someone and ask “what do you think of this machine?” and “What do you find good about this machine?” because I will want the exact same machine to go into Dublin airport. So, there are the two sides of it – standardisation of technologies and also using that to put pressure on the industry to meet our requirements, meet the requirements of the end-users to develop technologies that will be useful for us and to deal with emerging threats.

The other side of standardisation are the Raman spectrometers. Next year we hope to bring in the Raman Spectrometers into the post centres so they will be able to identify very quickly designer drugs and indeed any kind of drug. They are being rolled out through Europe at the moment. A lot of countries have them, and we are getting them this year. The Dutch Customs has done a lot of work on standards there and the Joint Research Centre, which is the “EU laboratory”, has actually developed a testing kit for these machines. So that’s all areas what we could build on to and I hope that PEN-CP will build on this sort of groundwork that is already being done.

**PEN-CP-MAG: Do you have other expectations on the outcomes of PEN-CP?**

**Kevin:** Well, I think it would be great if we could have European procurement. I talked about procurement and how procurement now is made at a national level. It may be easier for countries to join together and do joint procurement. Just now there are many political hurdles in that regard, but it would be a great success if PEN-CP could work towards that. So if for example Ireland and Germany and Italy want to do joint procurements to buy x-ray machines or buy computer systems or training. it would be made easier to do that, on a sort of organisational level, as opposed to a political level.

**PEN-CP MAG Is that much thanks to the network being there?**

**Kevin:** Yes, I think the network is there and we could make publications and that way put pressure on our bosses. I don’t know now if that is actually a possibility, that is perhaps a little bit an ambitious sort of a goal. If the network could work on that and achieve some success, it would be really a great achievement. It is about the money. If you are pooling your resources the manufacturers are forced to give you lower prices, and also they are forced to compete in terms of their technology. I think it would encourage them to build better systems. It is a reasonable goal to aim at after five years.

**PEN-CP-MAG: Thank you very much for taking time with us!**

# ➤ PEN-CP Interview with Jonathan Migeotte, Belgian Ministry of Finance

**PEN –CP Magazine: Which is your organisation and what is your role there?**

**Jonathan:** I work for the FPS Finance, which is the Belgian Ministry of Finance. It is divided in several administrations, one of them being the Customs and Excises administration (BCA in short). I myself work in the Risk Management & Data mining department of the Customs and Excises administration.

As a department, our role is to assess and manage all types of risk related to the customs business, both on the national and regional levels. Risk management is the systematic mapping of risks and the implementation of all measures necessary to limit the exposure to risks. This includes activities such as the collection of data and information, the analysis and assessment of risks, the prescription and taking of actions, the regular monitoring and revision of the process, and the results of the processes, on the basis of international, community and national sources and strategies.

My specific role in the department is that of a Coordinator. I do my best to ensure that all national and international projects involving the department are going in the same direction, and that we are not stepping on each other's toes in the process. I take on the same responsibility on behalf of BCA for the PEN-CP project.

**PEN-CP-MAG: When and how did you learn about PEN-CP?**

**Jonathan:** I first heard of PEN-CP in February 2017, two months after I joined the department. One of my predecessors had participated in the drafting of first version of the proposal. At the time, the proposal was rejected by the European Commission because it was not polished enough. The PEN-CP proposal then dropped on my desk and didn't leave it ever since. In hindsight, the rejection of the first proposal was a blessing in disguise. It allowed us to rethink the project and to focus ourselves on what customs partners would really need.

**PEN-CP-MAG: Why did your organisation (and you) decide that it was a good idea to join?**

**Jonathan:** As an organization, we aim to be at the leading edge of what technology has to offer in the customs business. But Belgium is a small country, and technology has a cost. We can't afford to fail or to buy technologies to end up not working as well as intended. So in order to be able to go forward in a resource efficient manner, we have to be able to coordinate ourselves with other member states. Look for common ground where it's possible, share information about new technologies, share user experiences of new products and technologies amongst ourselves.

That's why PEN-CP is an important project for the Belgian Customs. It allows us to do a lot of things that we needed and wanted to do anyways. Plus we can do it with the help and funding of the European Commission (Horizon 2020 program).

**PEN-CP-MAG: Are there innovations/ technologies your organisation uses today that you did not have access to say 5 years ago?**

**Jonathan:** Quite a few actually, not counting the ones that were tested but abandoned and also the ones that are still in the pipeline.

We recently invested in Raman devices for all our ports and airports. The fact that it's a portable device is really practical in addition to the fact that it can scan through clear packages. It saves us a lot of time and effort in the lab. We also acquired trace detectors recently, the same type that you often find in airports to detect traces of drugs or explosives on you.

New tools can also help on fiscal matters. We obtained a lot of Fourier-transform infrared spectroscopies (FTIR's) this year that are mainly used to detect 'Designer Diesels' designed to evade excises.

Our latest acquisition are portable Ion Mobility Scanners, but they are not in service yet.

**PEN-CP-MAG: What technologies or innovations are you hoping to have in 5 years time thanks to PEN-CP?**

**Jonathan:** Well, the thing with innovation is that you never know exactly where you'll end up.

Two of our biggest challenges at the moment are the never ending rise of eCommerce, and the fight against smuggling of illegal goods through our ports and airports. At the same time, we have to be aware of our facilitation role: Customs work must not disrupt legitimate trade. We have to be very thoughtful and innovative in our approach. Since those issues are very complex, we have to look at them from different perspectives and keep in mind that any solution we choose must be usable at the operational level.

We can for example look at the smuggling problem through the spectrum of the PEN-CP innovation themes. First, we need a detection mechanism to allow us to perform X-ray scans on as many containers as possible as quickly as possible. One potential idea would be to integrate scanners on the cranes unloading containers from the ships.

Second, we need to be able to process the images we receive from the scanners. Ideally, we'd have the resources to have trained officers review all of the images. In practice, it's not possible if the number of scans increases dramatically. So we have to look at data analytics and machine learning. A solution would be to train computers to detect potential smuggling based on past scan images. Over time, the machine should also improve and give better results than human officer.

Then, when we scan the containers and the machine

establishes that there is a potential risk, we need to control the goods. Most of the time, if you find something, you don't know immediately what type of goods you have in front of you. For example, a barrel of powder could be anything from sugar to drugs or explosives precursors. In order to know what it is, you would need to send a sample to the lab and wait for the analysis to happen. We already have some tools at our disposal to perform a quick analysis (Raman devices, Swipe trace detectors) but we need to expand and improve on that.

Those are all potential innovation we would like to have in 5 years time.

**PEN-CP-MAG: Do you have other expectations on the outcomes of PEN-CP?**

**Jonathan:** Other than technology and innovation, PEN-CP is also by definition a network of customs practitioners. We aim to build a solid network of knowledge-sharing between customs partners. There are always more ideas in two heads than one.

Customs in general are facing threats and challenges that are more and more global. We need to work together and help each other or we won't find any long term solutions to our problems. This also includes improved cooperation with other authorities such as Police. I know this might sound stereotypical but we're only as strong as our weakest link.

**PEN-CP-MAG: Thank you very much for sharing your thoughts!**





## European Commission preparing for EU Single Window environment for customs

**3.1.2019**

**T**he European Commission's DG TAXUD has just finished a round of public consultation on its roadmap towards the EU Single Window environment for customs. The consultation, that (ultimately) closed on 16 January 2019, aimed to give EU businesses, academia and public administrations alike the possibility to give their views on the issues of cross-border trade and the roadmap given in the Commission impact assessment document where the initiative is described. It is planned that the European Commission will adopt a proposal based on the initiative in the first quarter of 2020.

The aim of the EU Single Window environment would be both to enhance the enforcement of cross-border regulatory requirements and to promote trade facilitation. This will be achieved by better collaboration between customs and other competent authorities involved in the border crossing of goods, in part through automation of customs controls of supporting documents and electronic feedback on the customs clearance. In order to do so a framework of data harmonisation needs to be established and procedures for the re-use of data have to be decided, in

order to avoid that economic operators need to repeat the same information to several authorities. In the package a governance framework for the Single window is also envisaged, and the commission stresses that coherence and interoperability between national and EU Single Windows solutions need to be in place.

The Single Window and a paperless environment for border-crossing trade was foreseen already in the e-customs decision in 2008 and a paperless environment was taken one step further in the Union Customs Code (UCC) that came into force in May 2016. The current initiative aims at further digitalisation of the whole supply chain, enabling further collaboration between authorities as the customs clearance procedures often involve authorities from other policy areas (fisheries, agro-alimentary, statistics and so on). Also, the WTO Trade Facilitation Agreement that came into force in February 2017 requires the signing parties to make their best endeavour to create a Single Window environment for the needs of cross-border trade.

**Source:**

<https://bit.ly/2EsyOEb>



# Korean Customs Service Sees Opportunities for eBusiness in AI and Blockchain

28.12.2018

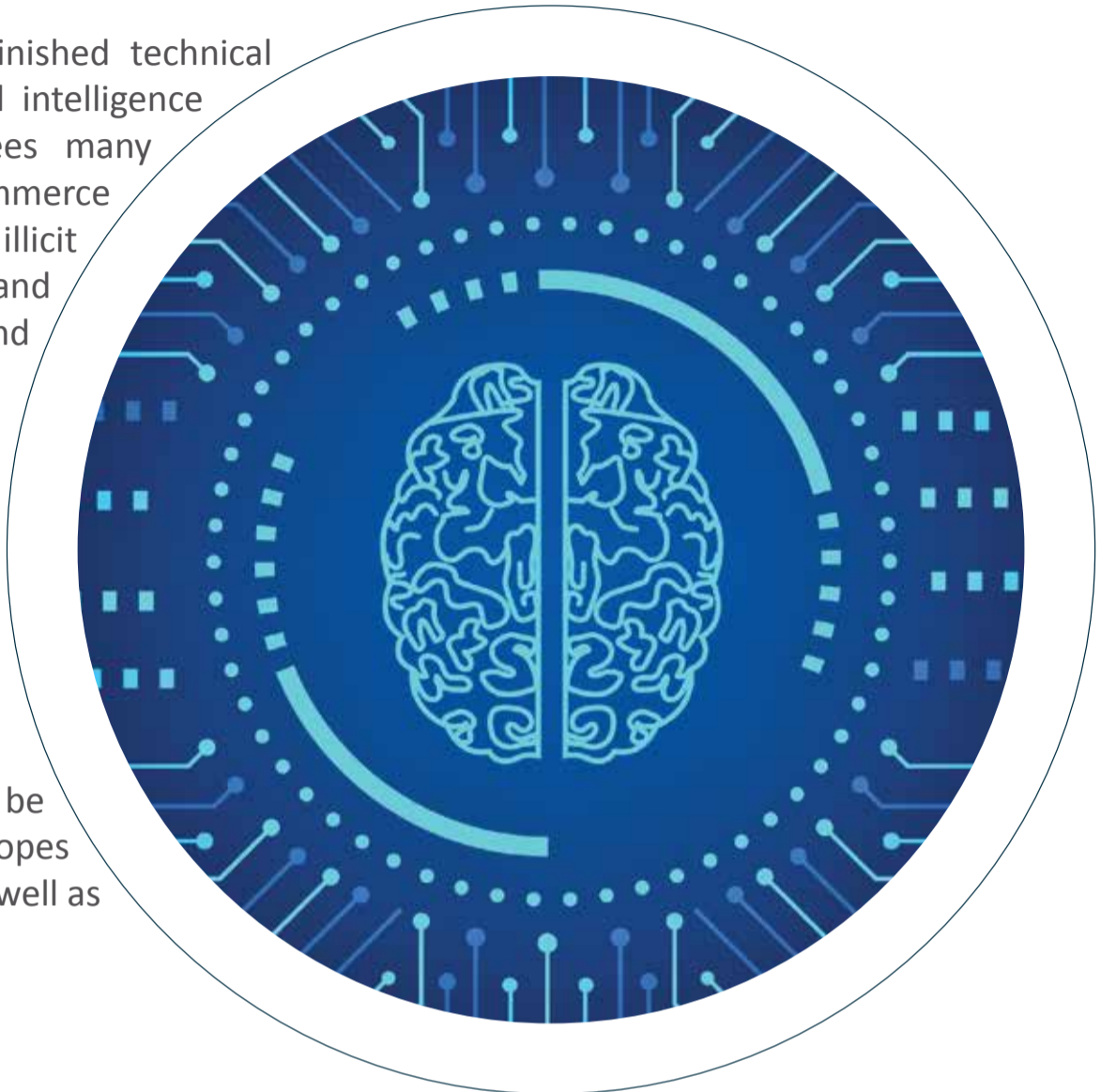
The Korea Customs Service (KCS) has recently finished technical verification of blockchain technology and artificial intelligence (AI) for their application in e-commerce. KCS sees many advantages in these innovative technologies for eCommerce and hope this will support businesses in identifying illicit goods. It will also allow eBusiness companies and transporters to share information on orders and movements of goods in real time.

KCS are planning for an AI supported scanning device in the later part of 2019 which they hope will allow companies to verify the accuracy of presented goods and enable them to identify illicit goods. The device is planned to be installed at the Incheon Customs Express Logistics Center.

According to KCS, the technical verifications will be expanded in a pilot project that the Korean Customs hopes will enable a speedy and correct customs clearance as well as a further hindrance of illicit goods.

**Source:**

<https://thenews.asia/en/2018/12/28/korea-customs-service-seeks-to-implement-blockchain-and-ai-987/>



## New global standard for Non-Intrusive Inspections in the making

18.12.2018

The WCO Technical Expert Group on Non-Intrusive Inspection (TEG-NII) held its fourth meeting in mid-December 2018, focusing on a new global standard for Non-Intrusive Inspection (NII) data. The standard would facilitate interoperability between various NII equipment provided by different suppliers as well as interoperability between multiple customs administrations. This would help realise the vision that the WCO has adopted for 2019: "SMART Borders for Seamless Trade, Travel and Transport." It would also support the development of the 2021 edition of the WCO SAFE Framework of Standards.

The new global standard is prepared in a Unified File Format (UFF) and a pre-pilot test has been approved by the Technical Expert Group. The format will now be tested by selected customs members of the WCO.

The group also discussed NII issues in a broader perspective, from how to integrate the techniques in everyday inspections to emerging technologies. The Group also agreed on an update of the WCO Guidelines for the Procurement and Deployment of Scanning/NII Equipment.

**Source:** <https://bit.ly/2T9bTbf>



# Coordinated Plan for Artificial Intelligence - “Made in Europe”

7.12.2018

In a coordinated plan, presented on the 7 December 2018 the European Commission and the member states of the European Union, have defined a number of actions that will take place to enhance the adoption of Artificial Intelligence, AI. The plan should build trust, foster talent, encourage investment and make more data available throughout the European Union.

The plan recognises that the collection of large data sets can have many uses in different disciplines, like effective medicine, planning of energy consumption and maintenance of machines, as well as in strengthening the public sector. AI will transform products, processes and business models and make for more efficient use of resources in the whole economy. This is true not least for customs administration where a number of uses for AI and large data sets can be identified.

The plan is designed to increase complementarity and synergies between actions on national level and at EU-level. The EU member states are encouraged to make their national plans available by mid-2019, a framework being provided for the national strategic plans.

The European Commission stresses that there is a special brand of European AI where security and ethics are at the centre and that this will lead to an AI where “people are at the heart of the action”. They aim to focus at the areas where AI will have the largest positive impact on solving common serious problems like climate change, safe transportation and cyber-security.

**Source:** [http://europa.eu/rapid/press-release\\_MEMO-18-6690\\_en.htm](http://europa.eu/rapid/press-release_MEMO-18-6690_en.htm)



## The European Open Science Cloud Launched

23.11.2018

To promote data driven science in Europe, the European Commission launched the European Open Science Cloud, EOSC, on 23 November 2018. The EOSC should provide “a safe environment for researchers to store, analyse and re-use data for research, innovation and educational purposes”, says the Commission.

The launch encompasses the presentation of a management structure and the opening of an on-line portal accessible for all. The opening of the portal is a first step towards the completion of the EOSC planned for year 2020. The European Commission and the member states have worked together on this initiative and the latter will each have a representative on the Governance Board, to be chaired by the Commission. Under the EU research programme Horizon 2020, some 600 million euros have been allocated to the portal.

The European Commission has high goals for the Open Science Cloud. In it’s statement it talks about “...1.7 million researchers and 70 million professionals in science, technology, humanities and social sciences... who will benefit from access to open data”. The Commissioner for Research, Science and Innovation, Carlos Moedas says in the statement: “With the Open Science priority, we set out to change the way European science works. And the launch of the first Cloud portal today is a major milestone on that journey. The Cloud will give Europe a global edge in reaping the full benefits of data-driven science...”

PEN-CP plans to explore whether Customs administrations could benefit from this initiative, for example in the context of customs forensics and laboratories.

**Source:** <https://www.eosc-hub.eu/news/european-open-science-cloud-officially-launched>



# Increased Safety and Reliability Thanks to Maritime Supply Chain Physical Inspection Pilot

7.1.2019

Maersk has recently implemented a Physical Container Inspection Pilot within North America. The goal is to advance safety and reliability in the Containerized Maritime Supply Chain, by verifying that cargo descriptions match actual contents of the container, and that the contents of the container are correctly stuffed, lashed and secured.

As part of this work, Maersk is currently performing inspections for Import and Export cargo into the ports of Newark Berth 88, Houston Bayport, Miami Pomtoc and New Orleans Ceres terminals. The physical inspections are carried out after random selection, executed as quickly as possible in order not to cause additional hindrance to the supply chain.

For containers that are discovered to be inadequate in any way, there will have to be corrective measures, before they can be loaded on to carrying vessels. Since the inspections are being performed in the United States, a container that has already made sea transit may be selected for inspection. Corrective measures will be made at the expense of the shipper or consignee, depending on which is appropriate.

The data collected through this pilot may be used to develop procedures that better ensure the accuracy of cargo descriptions provided to Maersk, as well as to improve the use of the Code of Practice for Packing of Cargo Transport Units (CTU Code). Maersk hopes to remove some of the risk from mis-declared or incorrectly stuffed containers for all parties involved in handling and transporting cargo.



**Source:** <https://www.ajot.com/news/maersk-physical-container-inspection-pilot>



## US DHS runs experiment on first responder technology integration in Houston Harbour

7.2.2019

The US Department of Homeland Security through its Science and Technology Directorate held a testing exercise in Houston Harbour in December 2018 involving 13 Houston-area public safety agencies and 20 industry partners. The exercise integrated next generation first responder technology and safety agencies' existing technology to assess their interoperability, using guidance from the Next Generation First Responder (NGFR) Integration Handbook.

The exercise, which goes under the designation Harris County Operational Experimentation (OpEx), included the United States Coast Guard, Federal Emergency Management Agency and the Office of Emergency Communications.

The Next Generation First Responder (NGFR) Apex Program works with first responders across the country to ensure the technology they use while responding to an emergency keeps them better aware, protected, and connected.

The December experiment piloted DHS-developed and commercial technologies integrated with existing public safety systems, using open standards during a HAZMAT scenario. The experiment also assessed how integrated capabilities enhanced operational communications, increased operational coordination, improved responder safety and augmented situational awareness.

There will be a follow-up experiment in the summer of 2019.

**Sources:** <https://www.dhs.gov/science-and-technology/ngfr>

# ➤ PEN-CP Year 1 Annual Event in Budapest, Hungary, 20-22.11.2019

Below you can read a preliminary high-level agenda for the Year 1 Annual Event (naturally there will be several rounds of iterations and finetuning, before freezing the agenda, say by end September)



1) Multiple panel discussions: present and discuss results of work done in the project so far, and debate about best ways to move forward (with 3-5 experts per panel):

- Security Innovation Monitoring (PSIM) & sharing user experiences – process and first outcomes
- User need ideas (PUNIs) & Innovation Funnel (PIF) - process and first outcomes
- On-going activities and lessons learned from other H2020 security practitioner networks as well as Customs2020 expert groups
- Experiences/ best practices in organizing open innovation activities on national level – what works, what not.
- Latest security technology and innovation trends – eye to the future



2) Several breakout sessions: prepare for upcoming project actions, and maximize collection of ideas and priorities from all consortium partners (each group presents briefly the outcomes):

- User needs and requirements for a future customs operations related communication toolbox
- Identifying relevant topics for education and training materials for project years 2 and 3
- Brainstorming on prototype grant ideas for project years 2 to 4
- Brainstorming on topics for NewView grants, Innovation prizes, Crowdsourcing and more, for project years 2 to 5
- How to drive maximum added value out of PEN-CP during the coming 12 months



3) Couple of presentations, focusing particularly on completed Annual study chapters and Expert reports.

## PEN-CP Year 1 Annual Event takes place at the Continental Hotel Budapest Superior

**Address:** Dohány utca 42-44, H-1074 Budapest, Hungary  
**Tel:** +36 1 815 1000

**e-mail:** [continentalinfo@zeinahotels.com](mailto:continentalinfo@zeinahotels.com)

**Website:** <https://continentalhotelbudapest.com/>

The hotel is offering following room options and prices for anyone who wants to stay there:

- Superior double room for single use: EUR 105/room/night
- Superior double room for double use: EUR 120/room/night

The above rates are inclusive of taxes (VAT (18%), city tax (4%) and the breakfast) and free entrance to Wellness and Fitness area on the rooftop.

**We will email the booking link (and a promo code) to all PEN-CP partners by 15.3.2019**

If you have any questions about the venue, rooms etc., please send an email to: [pen-cp@cross-border.org](mailto:pen-cp@cross-border.org)

# ➤ Visit this summer PEN-CP booths at key events by WCO and INTERPOL World!



## Objectives of the conference

- Explore implications of the digital world on Customs and other Government agencies in the future.
- Showcase private sector and Governments' most recent technological developments that will provide new capabilities and opportunities and impact how Customs facilitates trade and performs its regulatory tasks.
- Monitor emerging trends, including IT solutions for exchange of information between Customs and between Customs and other agencies.
- Seek potential areas of synergy amongst relevant stakeholders at national, regional and international level.

<https://www.eiseverywhere.com/ehome/2019itticonference/788008/>



INTERPOL World is a global co-creation opportunity which engages the public and private sectors in dialogue, and fosters collaboration to counter future security and policing challenges. INTERPOL World comprises of three interlinked activities:

**30 strategic Co-creation Labs** to discuss the challenges and solutions for combating the crimes of the future

[Read more](#)

**Exhibition** that serves as a business and networking event for **250** manufacturers, distributors, and Research and Development organizations to offer innovative products and cutting-edge technologies

[Read more](#)

**INTERPOL Working Groups** (by invitation only) including the chief innovation officers group, artificial intelligence, drones and the Darknet and cryptocurrency group

[Read more](#)

<https://www.interpol-world.com>



## Follow PEN-CP online

**Twitter:** @PENCP\_NET

**LinkedIn group:** <https://www.linkedin.com/groups/8183667/>

**Researchgate:** <https://www.researchgate.net/project/PEN-CP-EU-H2020>

**URL:** [www.pen-cp.net](http://www.pen-cp.net)



## PEN-CP videos

**Short video:** <https://youtu.be/OXwQPHHS5Ls>

**Long animation:** <https://youtu.be/wq9y36J4ET8>

## Read more about PEN-CP

### WCO News:

<https://mag.wcoomd.org/magazine/wco-news-88/the-pen-cp-project/>

### WCO RILOs ECE and WE:

<https://bit.ly/2Tp905y>

### EU-C2020-CELBET:

<https://bit.ly/2T9cSrX>



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