



Customs Administration of the
Netherlands
Tax and Customs Administration



THE
5th WCO TECHNOLOGY
INNOVATION FORUM &
REVISITED



Dear delegates,

Recently you were a guest at the 5th Technology & Innovation Forum of the World Customs Organization. Up to me these were three sparkling days! I saw and heard things that hugely enhanced the way I see the future of our profession. I sincerely hope that the conference inspired you too, and that you returned home bursting with new insights and ideas.

What has been sown in Rotterdam at the end of October will be reaped in the months and years to come, all over the world. A seed has been planted for more innovation in the Customs world – that much is clear. For this I would like to offer my sincere thanks to the organisers of the TI Forum. In my opinion the World Customs Organisation has amply succeeded in bringing the expectations of the conference to fruition.

As the proud host of the 5th TI Forum the Customs Administration of the Netherlands has seized the opportunity to showcase its ideas on efficient and effective customs action. We have a clear image of our role and tasks – both now and in the future – in which everything centres on finding the right balance between enforcement and facilitating. That image is enshrined in our vision Pushing Boundaries, which has intensively been brought to your attention during the TI Forum. In this bulletin we will return to this subject – this time in more detail. Various specialists from my organisation will focus more closely on the key innovation and research areas that we identified in this vision.

We will show how our administration extends horizons and goes in search for new ones. We do this together with other enforcement agencies that are involved in border management, with the business community and with the academic and scientific sector. We want to be and remain innovative, and to share our ideas with the customs community worldwide. Not for ourselves, but for the protection of society as a whole and the interests of the international business community. I trust that you will recognise and share this ambition.

Sincerely yours,

Aly van Berckel-Van de Langemheen
General director of the Customs Administration of the Netherlands



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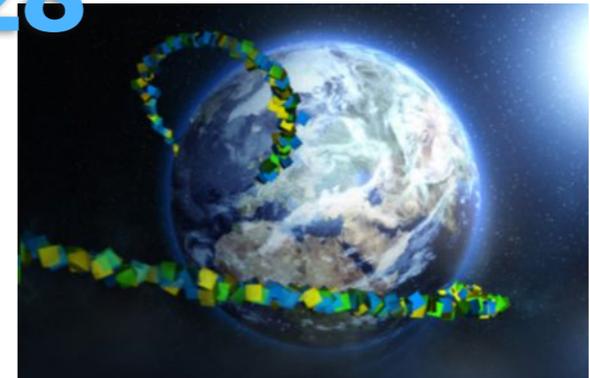
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Three sparkling days in retrospect



Tangible substance given to vision Pushing Boundaries

Interview with Frank Heijmann and Bert Wiersema

Under the heading of 'Pushing Boundaries' the Customs Administration of the Netherlands has developed a stratified enforcement concept that benefits both the service itself and the bona fide business community. It centres on an adapted inspection intensity for all market operators – from reliable company to unknown entrepreneur. Is this vision now being implemented in everyday customs practice? The question is answered by Director of Enforcement Bert Wiersema and Head of Trade Relations Frank Heijmann.

"Customs is responsible for supervising the fiscal integrity and the security of EU external cross-border movements of goods," begins Heijmann. "At the same time, Customs is expected to contribute to the competitiveness of the Netherlands and the European Union by providing support and by facilitating trade. We want to continue to fulfil this double role efficient and effective in the future, in the face of growing international trade flows. For that reason we have identified a dot on the horizon: an ultimate picture that we can gradually move towards and against which we can test all of the measures that we'll be taking in the years to come."

"The key aspect of this vision is that Customs will supervise 100% of the transports and goods that cross the Dutch EU-external borders. This doesn't mean Customs inspects everything, but that Customs can check whether the required notification and declaration has been lodged for every transport entering or exiting the EU via the Netherlands. It also implies that the information in the declarations and other documents give Customs a clear picture of every container and pallet entering or exiting the country."

Scan and detection

"We are currently taking action in various areas to bring about the desired situation", says Wiersema. "First of all, our Customs Laboratory is intensively participating in a European working group for the scanning and detection of goods. The suppliers of this technology have been given the challenge of developing the products as we want them: machines that not only generate images, but also provide information about them. Examples include applications that show differences in density at atomic level so that we can see whether the mass in a container corresponds to what is specified in the declaration. Our lab has drawn up a comprehensive list of specifications that the detection equipment has to meet. We are holding intensive consultations with the industry on this subject. We have set a high standard."

Big data analysis

"Customs is also encouraging suppliers for the scanning and detection of data", says Heijmann. "In the present situation we are still using the traditional method of comparing declarations with risk profiles and carrying out inspections if the parameters match. We are working towards forms of big data analysis. Is an IT company with specialist knowledge able to detect more and new risks in our data? Or is it able to enrich our data with information from public sources such as Twitter and Facebook? Or even can it link these to our own sources, such as container databases? Customs will employ highly qualified data analysts to take a close look at these questions with private partners. The first of them have already been recruited and started in September."

Compliance test

"We are also considering whether we can do more justice to the group of AEO certified companies", explains Wiersema. "The questions that have to be answered are whether we can exclude such companies from a risk-based approach, and whether a compliance test is enough. If so, all that we need to do is to carry out an occasional random check to establish whether parties are keeping to the agreed procedures. We have carried out a thorough analysis and established that this approach is indeed sufficient for most AEO companies. The next step is to work out how we can adapt declaration processing risk profiles in such a way that this group of entrepreneurs actually experiences a lighter inspection regime. It should be noted in this regard that parties that abuse our trust will be severely dealt with. Other than that, the question of whether an AEO company is actually approached on a compliance basis for all of its activities depends on its role in the goods chain. After all, a customs forwarder that files a declaration as a direct representative doesn't bear comparison with a major shipper. It is clear that the risk-based approach is still needed for customs forwarders with AEO status. We will need to enter into a dialogue with the business community on the position of these intermediaries."

Dashboards

Heijmann: "For complete logistics chains we take part in international scientific projects such as CORE. The purpose of this project is to find out whether entrepreneurs can provide information about their chain in such a way that Customs can view and use it. This takes the form of optional information in addition to the declaration data. This extra information will help us to manage risks and establish whether the company concerned is reliable."



“Dashboards are being developed for this purpose, and are expected to be operational around the beginning of 2016. This will make it possible for Customs to check directly in the operational systems whether the formalities have been correctly selected. This means that a market operator no longer has to hand over documents and answer questions asked by our service. The result: lower inspection intensity and a reduced administrative burden. We are also making more arrangements with companies in the chains in order to make them more secure. To give an example, we’re currently holding talks with a number of fast parcel delivery companies to establish whether we can supervise them more upstream – higher in the chain.”

Boost for declaration processing

“With a view to the companies that are not or are less in our sights, we’re looking for ways to improve the quality of our declaration handling processes”, continues Heijmann. “With this aim in mind we’re training staff for this process and are employing more highly qualified personnel. And now that our new declaration system AGS has gone live, we’re considering the introduction of workflow management so that we can have the declarations handled in a smarter way by specialists. Finally, we’re looking into whether mobile working and the internet of things can be of any use to improve in the planning and steering of deployment of our manpower and resources. But this is still at an early stage.”

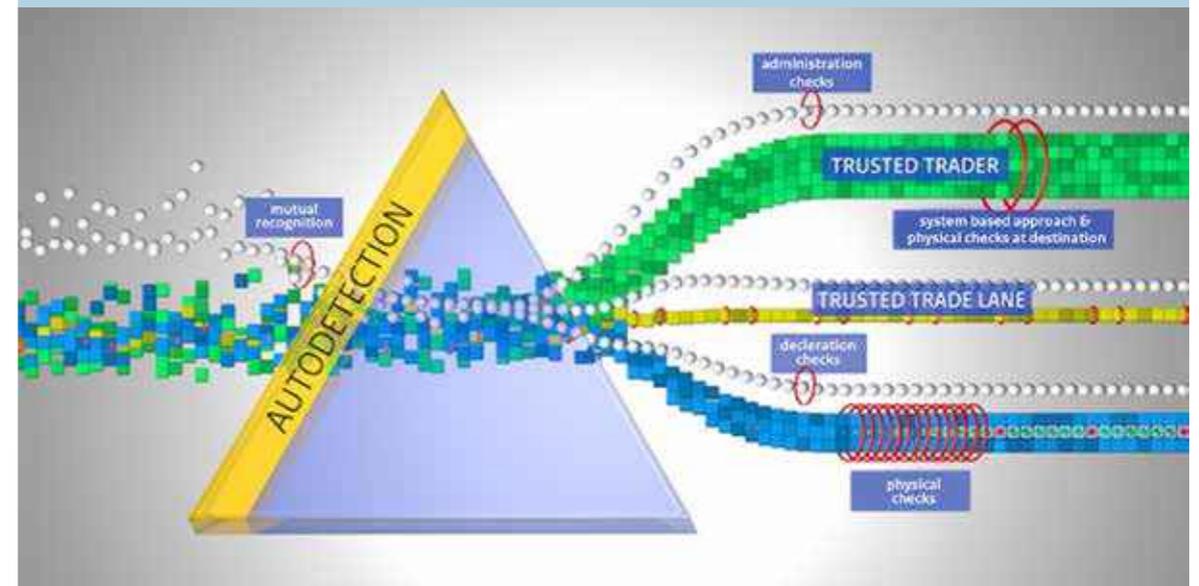
“As you can see, The Customs Administration of the Netherlands is making sterling efforts to give tangible substance to its vision Pushing Boundaries”, concludes Wiersema. “The way we see it, with this approach we will intensify our supervision whilst also ensuring that we continue to support the Netherlands’ leading position in the international logistics rankings.”

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Glorious future for scan and detection

Interview with Micha Slegt

Automatic detection in shipments plays a leading role in the vision Pushing Boundaries of the Customs Administration of the Netherlands. Increasingly smarter equipment is making it possible for the service to draw faster conclusions about the content of sea and airfreight containers and determine whether to open them for inspection. Specialist Micha Slegt – chief analytical chemist at the Dutch Customs Laboratory – on the future of scan and detection in customs supervision.

“As a customs organisation there are two things that we want to prevent”, begins Slegt. “At first: missing any risks must be avoided at all times. If that happens, we will lose our credibility as an enforcement agency. For that reason it’s important for us to use our inspection resources in such a way that we filter out all irregularities from the goods flow. On the other hand, we want to avoid a situation in which we make inefficient use of our resources. All that does is creating needless work and causing our traders unnecessary delays. This would harm our country’s trade position, which underlines how much our actions affect the logistics chain.”

Prudent choices

“For that reason we are now working on a sophisticated sequence of resources that make it possible to provide information about the integrity and security of cargo as quickly as possible and in automated form”, continues Slegt. “But when I mention resources I’m talking about more than state of the art scanning and detection equipment. I include our detection dogs in this, too. Next there are our intelligence and selection departments, who earmark consignments for inspection on the basis of risk assessment. Taken together all of these elements form an architecture within which we can make well-considered choices: which resource can best be used and when? These choices will be automated in due course – supported by software that is continually fed with the latest data. The system advises: if you expect this type of risk for this category of goods, this is the best combination of resources to use. But the human factor must always be decisive. It is ultimately a well trained customs officer who decides whether the choice is the right one for the job to be done.”

“We are testing new, promising equipment on site to see how everything works in day-to-day practice”

Open end-systems

“In experiments carried out in partnership with industry and science customs acquires knowledge about the most appropriate technology to be used for a certain type of cargo”, says Slegt. “With colleagues who work in the field we are testing new, promising equipment on site to see how everything works in day-to-day practice. That way we contribute to the development of resources that are geared entirely to our specific situation and needs. By way of example, we are now taking part in tests with automatic detection in x-ray images, in which the computer recognises certain types of contraband. We are also directly involved in the refinement of what is known as sniffer-technology, which makes it possible to test air – in a container, for example – for the presence of high-risk substances. Examples include precursors for explosives. Our preference is for open end-systems that are able to learn. Systems such as these can be geared to current risks, such as those presented when new types of amphetamines are put in circulation. This is a very useful tool for changing the focus of our inspections.”

“If we are able to create cohesion in all of the data from our inspections and refine it, this could provide highly usable signals for our intelligence”

More information gleaned from data

“We constantly will have to train our employees to use it properly to make the best possible use of technology”, says Slegt. “Utmost important is to continue to recognise unusual situations and respond to them. It is of vital importance to expose x-ray analysts to situations that rarely occur in their day-to-day work, for example in a simulation setting. This will reduce the chance of missing low-prevalence risks.”

“And there is another condition for actually making efficient and effective use of high-quality inspection resources: we have to connect them together. Each and every one of them generates information, but there is not enough convergence yet. If we are able to create cohesion in all of the data from our inspections and refine it, this could provide highly usable signals for our intelligence. That way we as an organisation learn more and more and are able to make more targeted selections in our inspection process. We want to achieve this as soon as possible.”

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Nuclear detection

Nuclear detection resources form a separate category in the range of customs inspection instruments. This branch, too, is fully in development, says Slegt. "On a limited scale we have put advanced spectral portals in place – in areas where high speed is needed in the logistics process. If an alarm is sounded we can immediately establish which radioactive substance is present. This saves the trouble of opening a container for innocuous substances that emit radiation, such as those contained in certain agricultural products. We also raise the quality of our traditional portals by installing better software. This software provides more detailed information about the possible cause of the radiation. The source is sooner classified than identified. But that helps us to avoid situations in which we unnecessarily stop a cargo for an additional check with handheld scanners."

"We check what must be checked, but keep delays to a minimum"

Minimising hindrance

"You see: at Customs we do everything possible to carry out our task in the cross-border supply chain and filter out things that don't belong in goods flows", concludes Slegt. "At the same time we will minimise the hassle for international trade. We therefore use remote scanning at Schiphol: companies scan goods within their own process, based on their own security needs. At Maasvlakte 2 our container scanner is situated at the terminal: the containers enter the scanner by way of automated vehicle guidance – AVG –, and human action is not required. Customs monitors the scanned images remotely in both cases. We check what must be checked, but keep delays to a minimum. As a distributing country, the Netherlands earns money with goods that cross its territory. We have always been able to do this just a bit more smartly and more quickly than our neighbouring countries. If it's up to us that will not change, and the international logistics business society will continue to choose our mainports Rotterdam and Schiphol."



Data help to make the flow of goods safer

Interview with Maarten Veltman

The vision Pushing Boundaries of the Customs Administration of the Netherlands principally supports the idea of '100% supervision'. This means that the department can verify whether the required notifications and declarations have been lodged for all means of transport and goods that cross our borders. This process is helped by an analysis of available data and a close cooperation with the providers of such data. The expert Maarten Veltman recounts how Customs continue to further improve their information position.

Prior to any physical or administrative check, Customs assesses and validates the relevant data, followed by risk detection and risk selection. Veltman explains that such relevant data are gathered from an increasing number of sources. "Let us suppose: you would like to know more about the background of a company or its solvency. You can gather information: did the company come into the news recently in a positive or negative way? Or: how does the company present its profile on Facebook, Twitter or other social media? This information is actually used as a type of counter information, with the aim of making a better assessment of the effective information that is available."

Smart seals

Smarter technological solutions aid to the gathering of useable data. Together with the shipping company Sea Trade, Customs take part in a public-private pilot in which Internet of Things-like applications are the focal point. Veltman: "These concern what is referred to as smart seals: a device the size of a car key that is put in a container. The device registers such matters as changes in the magnetic field, temperature and brightness of light, that is to say whether the doors were opened during transport. On departure from the country of origin the data are read out via a smartphone, a tablet or other device, and subsequently automatically forwarded to the customs administration of the country of destination. On arrival, it is simple to check whether and/or when any changes occurred."

"By combining large quantities of information you can find patterns you did not know existed before"

'Talking' data

Risk analysis has taken on an important role in customs supervision. That will continue in the future, although the focus will gradually shift to the use of big data. Veltman says that it is an umbrella term which comprises all sorts of forms of data research and data management. Just think of such phenomena as data mining, process mining and text mining. "We refer to open data where data in the open space are made available for re-use. This also includes the information Customs make available to the outside world. Linked data concern the connection of information via links. Whatever the label, the focus is essentially the same: to use data in such a way that they help us to make the flow of goods safer and more conscientious."

"Our headquarters has recently been strengthened by a number of highly educated data analysts, who will raise business intelligence to a higher level"

Veltman states: "When setting up risk profiles, Customs decides in advance which signals of possible irregularities must be picked up. The innovation of big data is that we make the actual data 'talk'. By combining large quantities of information you can find patterns you did not know existed before. Typically, a company dealing in hardware suddenly decides to import foodstuffs. That is naturally possible, but maybe something is up. It is good that we are made aware of such a switch by linking several external data sources to our own sources."

A fresh look at things

According to Veltman it is not enough to get in as much data as possible and to have the hope that interesting matters show up just like that. "The vital questions are: what do you take in and what not? Which data are relevant, and how do you find the essence? What do our staff members need to use? What's more is that it is not possible to store big data in the existing systems; these data need distinct surroundings."

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Customs and logistics are on the eve of a very interesting development

“It is not possible to do without the experts who can interpret this information in a proper way. When is it a matter of clear cause-and-effect relationships and when is it a matter of coincidence? It is for this reason that our headquarters has recently been strengthened by a number of highly educated data analysts. They form part of the team Business Analytics and this team will raise business intelligence to a higher level. In addition we are cooperating with the academic world and various other private parties. We invite companies to our Customs Intelligence Lab with the aim of dealing with our data in a smart way and to have a fresh look at things. These companies are challenged to demonstrate their approach. In this way we hope to attract innovations that really add value to our business processes. This type of study takes place in a separate, protected environment. The data that are used stay with us; anyone who has access to them has been screened and has signed a confidentiality statement.”

View data immediately

Veltman stresses that Customs and logistics are on the eve of a very interesting development. “At the moment, a customs officer has to open ten systems in order to inspect one consignment. As far as we are concerned all the relevant data can be presented comprehensively in the near future. We will go into that direction using what is referred to as the data pipeline, in which IT systems of companies are linked within an international supply chain via the Internet. This will enable Customs staff from their offices to immediately view everything in the chain. Which products is a company going to export and in which quantities? Where the Department is aware of all the ins and outs of a consignment, there is much less need for administrative actions or there may be no need at all. This means eventually that we will be able to reduce the inconveniences to the business sector.”

A photograph of two men in business suits standing in a port. In the background, a white truck with a yellow crane is lifting a yellow container. To the right, a large red container is visible with some numbers and letters. The sky is overcast. A semi-transparent blue box is overlaid on the left side of the image, containing the title and subtitle text. Navigation arrows are visible on the left and right sides of the image.

More grip on the flow of goods through the blue channel

Interview with Eggo Bert Smid and René Doolho

Logically, the vision Pushing Boundaries of the Customs Administration of The Netherlands also focuses on the flow of goods from unknown and less well-known market players through the blue channel. For relatively speaking, these market players pose the most potential – tax and non-tax – risks*. Customs staff members Eggo Bert Smid and René Doolho talk about how Customs wants to make these risks more manageable.

The flow of goods through the blue channel consists of non-certified companies, explains Doolho. “It is not that we really don’t know these companies – apart from real smugglers, who want to stay under the radar. Nor are we talking about market players who are, by definition, unreliable. The point is that we cannot say anything about their reliability, because we don’t have enough information available. For instance, we have no insight into the reliability of the internal control measures of some market players which should guarantee the quality of declarations.”

Smid says: “It sometimes depends on the role a company wants to fulfil in the chain at a certain point in time. Sometimes, the company may form part of the flow of goods through the green channel and at other times it may form part of the flow of goods through the blue channel. Suppose that an AEO-certified customs-broker files a declaration for a new customer. This customer is a foreign importer whom he barely knows and for whom he therefore cannot vouch. On paper, the declaration concerns a shipment of cardboard cups, but this has not been verified – perhaps other goods are smuggled into the EU. In this specific case, the shipment forms part of the flow of goods through the blue channel as far as supervision is concerned.”

More hits

The flow of goods through the green channel concerns economic operators who have proven to be reliable and who have their affairs in order. Any risks will be the joint responsibility of Customs and the business sector. “In principle, we bear the risks within the

“The focus is on quality, predictability and standardisation, as well as working in the present”

flow of goods through the blue channel”, Doolho says. “That is why risk management is key here, which requires proper business analytics, among other things. New selections must be predictive in nature: what risks can we expect? We will be taking more decisive action on the basis of improved decision-making models, and will be looking for deviations in known patterns even more than we do now. Examples are goods whose price was the same for a long time, and which are suddenly given a much lower customs value. We will also increase the effectiveness of our inspections: we want even more hits when we select a shipment based on risk analysis. And when the flow of goods through the green channel will soon be properly organised, more capacity will automatically become available for inspections within the flow of goods through the blue channel.”

Taking swift action

Smid says that recent developments within the customs process of declarations handling have cleared the way for more enhanced supervision. “For a long time, we put too much faith in technology: the new AGS system could handle all declarations automatically. Declarations were verified behind a desk, conducting physical inspections was an entirely different discipline within the service. Now these two working areas are increasingly complementary. Handling declarations is one of Customs’ core tasks. The focus is on quality, predictability and standardisation, as well as working in the present. If a declara-

“Of course, companies don’t like it when we stop a transport within the logistics chain. But this is something they can often expect in the flow of goods through the blue channel”

tion is selected for special attention, we will decide as quickly as possible what action we should take. Even if there is a reason to pay a visit to a company, for example, we will do so at the earliest opportunity.”

Doolho: “At the same time, we invest in a more clever guidance of our staff when it comes to physical supervision. We are looking for technology to improve communication around physical inspections, and to improve the efficiency of these inspections.”

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Own initiative

Smid continues by saying that the flow of goods through the blue channel has many market players with smaller volumes. "There are a limited number of transactions with seemingly limited customs risks. But it is precisely because we cannot always establish this with certainty that we will be implementing even more stringent inspections at the border than is currently the case. In case of a significant risk or if we detect an error in the declaration, the goods will certainly be stopped." Doolho : "Of course, companies don't like it when we stop a transport within the logistics chain. But this is something they can often expect in the flow of goods through the blue channel. Nevertheless, Customs tries its best to minimise delays."

"We prefer companies to take effective action of their own accord if they are not sufficiently in control" Smid says. "The customs broker in the above example could assess his foreign customer. Just as Customs does: by collecting enough information about him, or by physically verifying if the goods declared match the actual shipment."

Cost-benefit analysis

Smid and Doolho know that there will always be companies that are unwilling to take that extra step, for example importers who do not like all customs formalities and engage a customs broker who only files declarations for them with a minimum amount of data. However, Smid says: "Companies that are not AEO-certified will certainly experience many more delays in the future. Moreover, you will, in some cases, need an AEO certificate anyway. For instance, under the Union Customs Code, companies will soon have to be AEO-certified for the so-called entry into the records - which is now still called monthly declaration. Only advance declarations of participants in the flow of goods through the green channel will be checked before presentation of the goods. In other words: no additional facilities without an AEO certificate. For companies, this mostly comes down to a cost-benefit analysis: do they choose an additional supervisory burden or do they pay the costs of an AEO certificate?"

* Non-tax risks are risks in the area of health, (food)safety, the economy and/or the environment.



Candidates wanted for the green channel

Interview with Wim Visscher

With the designation of the flow of goods through the green channel in the vision Pushing Boundaries, the Authorised Economic Operator concept is taken to the next level. The introduction of compliance-based supervision ensures a further reduction in inspection pressure for AEO certified companies, whilst the concept of 100% supervision remains in effect. Policy advisor Wim Visscher explains the underlying reasoning.

Businesses have been able to acquire the AEO status since 2008, on condition that Customs has sufficient trust in them – based on an assessment of their internal control systems and control mechanisms. Collaboration between Customs and these reliable economic operators has been advantageous for both parties. Despite this, one company is not the same as the other.

Companies vary considerably

“The Netherlands has roughly 1,470 AEO certified companies”, says Visscher. “These companies received their certificate, as they were able to demonstrate to have established internal control measures, although it could not be established that these measures are properly applied in daily practice. There is a great diversity within this group. Next to shippers, which usually have good control of their goods flow, there are so-called customs-brokers. Some of these customs-brokers submit their declarations on their own behalf, while others submit them in the form of direct representation, on behalf of someone else. This implies that they are not considered the debtor for any customs duties and other taxes to be paid upon import. It is true that they are a trusted party, but they are only liable for a certain portion of their work. If anything is out of the ordinary with respect to a shipment, Customs should not approach them, but instead should approach the importer. Transport companies with an AEO Safety Certificate, on the other hand, ensure that a shipment of goods is transported safely from point A to point B, and guarantee that nobody else can get to the goods from that point on. However, this says

“We provide them with compliance-based supervision, which means that we apply spot checks in such an operators’ supply chain: are the internal control measures still properly applied? Are they still in control?”

nothing about the contents of the shipment. In short: the role a company plays in the logistical chain determines its responsibility for the goods and its declarations.”

Role in the chain

But how does this affect a possible participation of a company in the green channel? Visscher: “This channel first and foremost consists of companies with an AEO status, of which it has been established that their internal control measures actually function in practice. We provide them with compliance-based supervision, which means that we apply spot checks in such an operators’ supply chain: are the internal control measures still properly applied? Are they still in control? If the company plays a limited role in the chain, we mainly offer it logistical facilities. On the other hand, if it plays a substantial role and if it has an extensive knowledge of its clients - either because it screens its clients or because its clients also hold AEO status - it is capable of taking responsibility for the quality of the information in their declarations. In that case, such a company can take the most advantage of its participation in the green channel. However, together with the business community we have to look for the proper acknowledgement of a company’s role in the chain.”

“We are opting for a more efficient approach. This consists of a limited number of observations within the administration and physical inspections”

Predictability is paramount

What do AEO companies get out of participating in the flow of goods through the green channel? After all, they are already receiving extra facilitation from Customs. Visscher: “The idea behind the introduction of the AEO programme was for the administration to be able to gradually divert its attention from compliant to non-compliant companies. We have not completely succeeded in this regard. Our inspections are not yet adequately harmonised, resulting in certain companies still experiencing a high level of inspection pressure – although those companies already have everything arranged properly. With compliance-based supervision, we are opting for a more efficient approach. This consists of a limited number of observations within the administration and physical inspections.

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The exact number of checks required is still under investigation. We are expressly refraining from looking for errors, but instead we are checking whether the internal control measures are still effective. In the context of the AEO programme, we have assessed the structure and existence of control measures, when issuing AEO certification. Later, during the AEO field test, it is assessed whether these have been implemented in actual practice. One is actually required to look back: did things go well at all times? This is also a good moment to determine whether a company is eligible for the flow of goods through the green channel."

Customs actually samples the flow of goods with compliance-based supervision: are the processes properly managed? Is a company that was considered in control, still in control? Visscher: "In this approach, predictability is increased and we are able to minimise any disruptions to the logistics processes. Furthermore, a company classified in the flow of goods through the green channel, can expect to receive extra service from us, in addition to the advantages already granted as an AEO. This could take the form of an early announcement of a physical inspection, and could also mean that the company in question would receive the results of such a check faster. However, our service spans even further. We are also investigating the possibility of processing declarations from this group of companies in advance of the freight transport logistics."

No doubts

Visscher emphasises that "participation in the flow of goods through the green channel can be accomplished after having passed the AEO field test. The new Union Customs Code will in fact refer to the AEO status as an authorisation, but nothing else will change in this regard. The certificate still offers companies certain customs facilities, in accordance with the EU principles. However, I have no doubts about the success of the concept for the flow of goods through the green channel. Luckily the parties that we would like to work with in this regard also recognise the added value of such an efficient form of supervision."



A better perspective on complete chains

Interview with Han Bosch

Within the vision Pushing Boundaries of the Customs Administration of the Netherlands, the flow of goods through the yellow channel is the greatest asset. The building blocks: physical integrity of supply chains and reliable and safe digital data. Customs official Han Bosch provides us with insight into the near future of Trusted Trade Lanes. The focus of the supervision in this respect will be on far-reaching cooperation with trade and industry.

“The flow of goods through the yellow channel signifies that Customs is aware of each and every link in the chain”, explains Bosch. “The concept is known internationally as Smart & Secure Trade Lanes – embraced by all members of the World Customs Organisation in the SAFE* Framework. It is a vision for the future that helps achieve a balance between security and trade facilitation in the international movement of goods. Smart stands for the quality and reliability of the data, and secure stands for the physical integrity of the flow of goods within such chain. The Netherlands is amongst the front-runners when it comes to investigating and testing the concept. We accomplish this in two projects: SSTL, or Smart & Secure Trade Lanes, and CORE.”

Container transport and airfreight

“The SSTL programme has been underway for roughly eight years and entails a collaborative venture between the customs authorities of countries through which the goods are transported,” says Bosch. “China and several EU Member States have been partners in this research from the start. Hong Kong joined in as from 2013. We use each other’s findings of inspections, we exchange information on risks, and we develop global systems to exchange this information. The initial focus was on container transport; in the meanwhile we look at airfreight as well. Of course there is always room for improvement. The section from the one customs authority to the other is covered. However, one has less of an idea about what happens in China, for example, before cargo is shipped, and here in the EU, after said cargo has arrived. In the end, Customs would like to be able to oversee the entire chain – from Chinese producer to European consumer.”

Serious players

The underlying idea of SSTL corresponds with the objectives of CORE – Consistently Optimised Resilient Secure Global Supply Chains. The successor of previous EU initiatives such as Integrity and Cassandra has now been underway for roughly a year and a half. Bosch: “Innovation takes centre stage in this project. The goal is to increase the speed,

reliability and efficiency of trade and logistics, and to make government supervision of the chain more adequate and less burdensome. Our approach is maximum use of the information that is available within the companies, with as few interventions as possible in the logistical process. The Netherlands participates in a few demonstrations under the CORE flag, where the actual flow of goods is monitored by way of newly developed IT infrastructure. Key premise is that one party is responsible for the integrity of the goods and the quality of the information at the beginning of the chain. Other players in the chain can then reuse this information. Whether it involves agents, shippers, carriers or importers: all partners in the chain share information via a type of digital platform, the data pipeline. We would like to gain insight into who does what in the chain: which companies are involved, what goods are involved, who packed the box and who signed for the contents?”

“More and more companies are developing dashboards. The intention is for our systems and those of the businesses to be linked in time”

The number of CORE participants is limited for the sake of controllability and because it is a pilot project. However, all of the participants are serious players, such as Flora Holland and Seacon Logistics, for example. Trade and industry plays the leading role in CORE, which is not the case with the SSTL project; Customs follows that which takes place and provides advice from the sideline.

Dashboards

One of the developments associated with this is the introduction of so-called dashboards. These dashboards are digital platforms, which – apart from declaration data – could also provide access to information on or from a player in the trade lane, which is not already available via the current customs systems. Bosch: “This information would be supplementary and the provision of such information is not legally compulsory, but it could help us to perform our supervisory task more efficiently. In some cases a company in the chain will provide this information spontaneously, and in other cases it can obtain it via one of its partners.”

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The Customs Administration of the Netherlands has an unequivocal view of how it can provide the most sophisticated form of supervision for EU cross-border movements of goods in the near future. This pioneering view relies on the following pillars in particular:

- Scanning and detection in the flow of goods
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- Development of the flow of goods through the green channel
- **Development of the flow of goods through the yellow channel**

The provision of service also plays an important role in the vision Pushing Boundaries. All of these elements are covered in detail in this publication.



"It is gratifying to see that more and more companies are developing dashboards. The intention is for our systems and those of the businesses to be linked in time. If you are able to look at the information in real-time, it is not necessary to visit a company repeatedly. You know what you have in each other, and don't have to bother one another as often. Customs thus becomes a reliable and predictable partner for companies, and vice versa."

Specific agreements

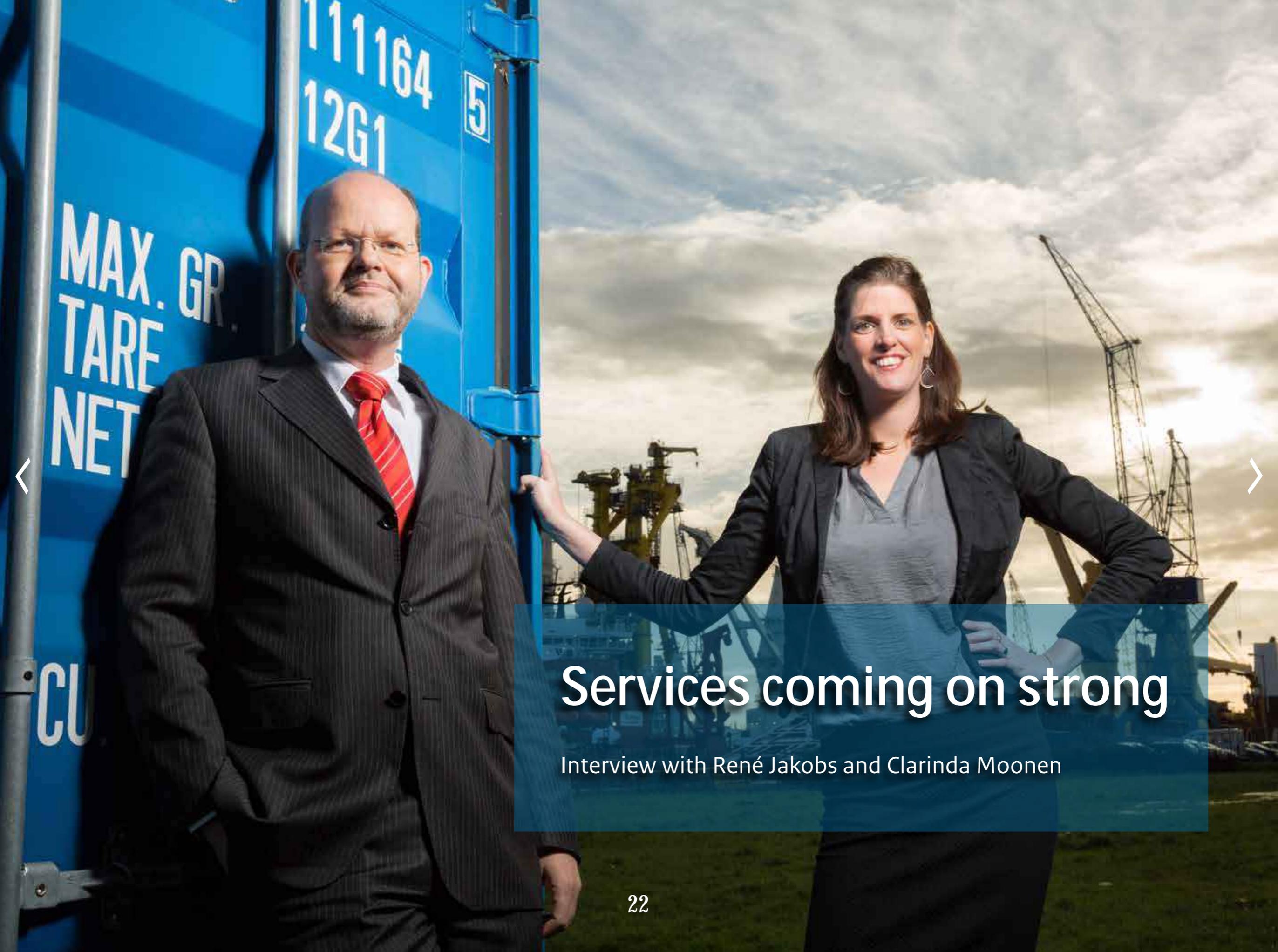
"There is still a great deal of ground to cover before these dashboards will be fully operational," says Bosch. "Various protocols and other agreements are required for this type of data exchange. How is data called up, when and by whom? Will authorised users only have reading privileges, or will they be able to save or alter the data? Also, who will manage the data? Customs, or perhaps one of the companies in the chain, or a different player altogether?"

Bosch continues by stating: "similar questions, for that matter, are also applicable for the information that is provided by smart seals. These digital seals communicate with interested parties in real-time, if something is possibly wrong with the goods that were loaded. For example, if a container were to be opened, before actually having arrived at the unloading destination. Customs is also an interested party in this respect, which implies that specific arrangements are to be made for this form of data exchange."

"A great deal is possible technically, but it must also be based on reliability and trust," Bosch emphasises. "None of the parties want their competitive position compromised, by having their company information freely accessible to all. This trepidation is actually quite comprehensible on the one hand. On the other hand, it is possible to incorporate sufficient checks and balances. Moreover, we are not heading in this direction merely because Customs absolutely wants to, but rather because we are all in favour of the reliable and safe flow of goods."

* Standards to Secure and Facilitate Global Trade





Services coming on strong

Interview with René Jakobs and Clarinda Moonen

The Customs Administration of the Netherlands is an enforcement service pur sang. But the organisation prefers not to enforce if this is not necessary. It preferably wants citizens and businesses to comply with laws and regulations of their own accord. In order to support them in this, Customs tries to provide them with the right information at the right place and at the right time. And it becomes increasingly successful at this, according to customs staff members Clarinda Moonen and René Jakobs.

Jakobs, who is a strategic policy adviser, starts by saying that “Compliance is the higher goal that we pursue”. “And services help citizens and businesses to be compliant. If you want to stimulate this desired behaviour, you will have to provide them with the information they need – preferably customised. For instance, Customs offers consumers insight into the rules on online purchases, and gives travellers an explanation as to which goods they are allowed to take home with them, whether or not from outside the EU. Entrepreneurs, too, have a need for information – usually in a tax or legal area. There are businesses that, due to the nature of their activities, have a thorough knowledge of the customs procedures, but there are also businesses that only occasionally import goods, for example. Some of them engage an intermediary, while others try to search for instructive information themselves. They all want a confirmation that they are doing things right.”

Higher ambitions

“Customs is more than able to meet this need for information”, Jakobs continues. “In the Tax Monitor – the annual indicator of the quality of the services provided by the Tax and Customs Administration – the business sector regularly awards us a more than satisfactory score. This concerns, among other things, our website, the Customs Information Line and the news reports on disruptions to the customs systems, which are provided by the National Help Desk. And the Proof of Good Service* also shows that the quality of our services is satisfactory. Within this context, we make agreements with the business sector once every two years in order to improve our services. But our ambitions go further than that.”

Self-reliance

“We use three principles to increase our service level”, Jakobs says. “The first is the online self-reliance of customers: citizens and businesses must, in principle, be able to find information on the internet themselves as much as possible. Our website is the primary channel where we make as much information available as possible.”

Moonen, who is a communications adviser, follows on from this by saying: “We are working on a new, more logical user model, which directs visitors to relevant topics in a more intuitive manner. The perspective is switched: we no longer only look at what we would like to communicate, but mostly at what our target groups want to know. Topics on which a lot of questions are asked – also to the Customs Information Line for example – will be given a more prominent place on the pages of our website. What themes are current will be measured and monitored on a continuous basis.”

Self-service and personal service

“Secondly, we use the principle of self-service”, Jakobs says. “In the next eighteen months, we will be developing a new digital portal called MyCustoms. This is an extension of the Tax and Customs Administration’s personal domain for entrepreneurs. This domain already allows businesses to arrange their affairs with respect to excise duty. Customers will soon be able to log into this domain to arrange all kinds of customs affairs: applying for and managing permits, or lodging an objection or appeal, for example. Electronic forms will become available for this.”

“Yet, we continue to provide personal services where necessary – which is our third principle”, Jakobs emphasises. “Businesses only sporadically dealing with customs procedures can always call the Customs Information Line. However, our regular customers will, as a rule, ask their more complex questions to their own client coordinator or to the Company Contact Point in their region. For they are generally already informed of their specific situation.”

Webinars

A relatively new tool that has proven its value for Customs services in a short period of time, is the webinar. “At the time when several modules of our new AGS declaration system were introduced, we held a number of these online information meetings”, Moonen says. “We believed that this interactive form of providing information would help people to be abreast of current developments more, which was confirmed in practice. There was a great deal of interest in the webinars: it did not take long before all four sessions were ‘sold out’. Talks and a subsequent survey showed that the participants considered this method of communication to be very pleasant. We therefore want to organise webinars more often in the future, for example during the implementation of the Union Customs Code.”

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Social media

Customs is continuously exploring the possibilities of means that are an addition to existing communication channels, social media, for example. The Twitter account @Douane_zakelijk, which is used by the service to target the business sector, was launched recently without much fanfare. Moonen: “We use this account to draw the attention of businesses to, for example, news reports that are published on our website. Research shows that they appreciate it if we provide information more actively. This is a careful start, which explains the low-profile introduction. We would like to do more within the online environment, as we are already doing for citizens. On Twitter and Facebook, we answer questions and provide relevant information in a proactive manner. It would be useful if we could offer a similar service at places where our business target group can be found. We are investigating ways to implement this, for example on LinkedIn. Eventually, we want to be where our customers are – also in the virtual world. Only then can we continue to provide them with the right information at the right place and at the right time.”

Service and facilitation

Service obviously goes beyond mere communication and online services. In the light of its vision Pushing Boundaries, the Customs Administration of the Netherlands is reviewing the possibility of developing tailor-made service for businesses. “This will depend on the degree of compliance and transparency in place for the purpose of Customs’ supervision”, explains Jakobs. “Our service also includes forms of facilitation and it is important to know whether a company or supply chain is categorised in the flow of goods through the blue, green or yellow channel. This could involve aspects like inspections at the start or end of the transport phase, or verification of declarations that don’t pertain to current affairs, to mention just a few. Freight transport logistics will therefore experience less inconvenience from our supervisory task. We do not yet know how all of this will play out. However, we are actively seeking to enter into dialogue with our partners in trade and industry.”

* A kind of quality mark from the government for the government, for agencies that make an effort to reduce the administrative burden on entrepreneurs.



How useful are container status messages?

Research Track

The WCO's 5th Technology & Innovation Forum featured a special track devoted to the latest research and development results in the field of technology use by Customs administrations. Following a call for papers and posters for this track, submissions were received from all over the world. The winning paper, by Greek engineer Aris Tsois and his colleagues at the European Commission's Joint Research Centre (JRC), is dedicated to the use of container status messages for improved targeting.

A container status message (CSM) is a piece of information that describes an event that has been undertaken with a container. These relatively well standardised messages are exchanged by the companies involved in the transport of a container to allow for the description of the whereabouts of a container, and its contents. Events recorded in a CSM are, for example, the stuffing of a container, the loading on a vessel or the discharge of a container from a vessel. The data captured in a CSM consist of the container number, a description of the event, the location at which the event took place, the dates and times of the event, the identification of an associated vessel, the load status of the container, and the name of the carrier company.

Dedicated treatment needed

Apart from the use between commercial supply chain actors, CSMs have also found an application with Customs and border management organizations in enabling them to trace back the handling actions of a container. Customs and Border Protection in the United States requires CSMs as part of the Importer Security Filing, more commonly known as 10+2 filing. Even though standardised – as with any real world data – CSM is not necessarily uniform, nor complete, nor chronological in arrival, nor lacking mistakes. Further, in a fast moving world vessels are transferred from one owner to another and the tendency to come up with names of ships that are not unique is remarkable. This all calls for dedicated

These relatively well standardised messages are exchanged by the companies involved in the transport of a container to allow for the description of the whereabouts of a container, and its contents

treatment of the CSM data before they can be used for the intelligence purposes of law enforcement. This actually also is the first step of the research work that Tsois and his JRC team performed.

Container-trip information

In extracting useful information from the CSMs, Tsois and his group propose to answer the following questions representing five relevant phases in a container journey:

- When and where do the goods get stuffed in the container?
- When and where do the goods start their deep-sea maritime transport?
- When and where was the involved container transhipped while carrying the goods?
- When and where do the goods end their deep-sea maritime transport?
- When and where do the goods get stripped from the container?

They did so in devising container-trip information (CTI) for every journey of a single container from origin to final destination using a machine learning algorithm. In setting up the CTI, the CSM information is assigned to the five phases mentioned above using a conditional random fields algorithm. The data calculated from the CSMs (the CTI) contain important information: the container identifier, the location involved, the time period covered in the phase of the journey and the vessel involved, for every phase. In the case the algorithm signals the absence of relevant CSM data, it will infer from the data that are present the most likely value for the missing data.

Vessel-stop information

Some questions however could not be answered from the CSMs directly. From a container staying on a vessel while the ship is calling one or more ports on the way to its final destination no CSMs are generated. As a consequence no CTI entry is made on the stay at these in-between ports, both in terms of location and duration. Customs administrations, on the other hand, have found information on the location of an in-between stop and the duration of that stop to be of relevance to their risk assessment.

That is why the JRC team also developed vessel-stop information (VSI) next to CTI. Using a specifically written vessel stop inference algorithm and employing all CSMs available, the build-up of the information needed became possible. As it turns out, this big data analytic approach to CSMs yields information to describe the location and the duration of

Interaction between R&D and Customs

Customs administrations around the world work tirelessly to cope with the challenges they are faced with. The WCO recognises the value of research and education as part of the response to these challenges. Crucial in stimulating research is to enable researchers and professionals to interact with each other. As host of the WCO's 5th Technology & Innovation Forum, the Customs Administration of the Netherlands promoted further interaction between the R&D and Customs communities by integrating a special track. The track was hosted by the Rotterdam School of Management (RSM) and Fontys University of Applied Sciences, and was supported by the Customs Detection Technology Expert Group (CDTEG) of the European Commission. A program committee, chaired by professor Tan (RSM), refereed the 22 submitted papers and posters and elected the best paper. Accepted papers were presented at the TI Forum in a break-out session, posters were put on display throughout the event. The winning paper was also presented as plenary lecture in the closing session.



Tsois and his team have gathered a large community of Customs experts that are kept up to date on the latest results

in-between vessel stops in sufficient detail. Of course some challenges remain with this approach, as names of vessels may be the same, precision in date and time reporting is far from ideal and data may be erroneous all together. Two assumptions were made in order to confront these challenges. Separate events at the same time with two vessels with the same name refer to one single vessel, and two vessels undergoing the same events at the same time refer to the same vessel.

Visual analytics tool

The newly developed CTI and VSI lay the ground for innovative analysis of CSM data for profiling and container targeting with Customs and border management organizations. To enable law enforcement administrations to actually use these findings in everyday practise, a visual analytics tool and the ability to include risk indicators had to be constructed. The developed prototype of this tool has now been included in the ConTra c website. It enables registered users to construct geographical maps, timelines and text tables from the billions of CSMs and the millions of CTIs and VSIs calculated from them. This highly insightful way of presenting dense information can be used to select those container trips that are subject to route-based indications for wrongly declared origin, abnormal handling time, suspect ports on the route, and drugs and weapons smuggling.

Broadly applicable development

Over the course of the research and development work on CSMs, Tsois and his team have gathered a large community of Customs experts that are kept up to date on the latest results. It is likely that this community will grow even larger with the presentation of his paper at the WCO's 5th TI Forum. The paper is a rare demonstration of a broadly applicable development based on widely available source material. A development that is practical and, moreover, made available to the actual end-users themselves.

Three sparkling days in retrospect



Watch the photos, ...



... a video impression of day 1...



... and a video impression of day 2.