Algeciras Port

TRAVESÍA DE LA INNOVACIÓN

Innovation Report 2019

Contents

"Algeciras, a port that welcomes talent and innovation with open arms: the ideal ecosystem for port-logistics entrepreneurs"

José Luís Hormaechea

General Manager of the Port Authority

Foreword by the Director 1

In the definition of our Strategic Plan for the Port of Algeciras Bay, looking towards 2020, we highlighted the importance of adapting to new realities to become a Smart Port. Along with the above, innovation – together with competitivity and sustainability – is the cornerstone of the effort that our Chairman wants to drive on with in the short-term.

Throughout these years, we have made great steps along the road of innovation, something that we have done under the "Algeciras BrainPort 2020" slogan, in order to reinforce the concept in all the areas of our port's business as a decisive factor to increase competitivity and generate added value (and not only financially).

We are now making another great step along that road, beginning the next year – 2020, a date that had been ear-marked in our Plan – with the start-up of our RD&i Policy, backed up by the implementation of an RD&i Management System under the UNE 166002 Standard.

With the principle of searching for continuous improvement, the RD&i Policy (which you may consult on our innovacion.apba.es website) is set to standardise our activities in terms of research, development and innovation applied to all the fields of our organisation.

Moreover, the strategy determines that we all speak of an "open innovation" concept; that is why it is important to count on all your ideas to focus on improving business, planning, teamwork, etc., to establish ourselves as a Next Generation Port.

This is precisely why we have organised a new edition of the "The Journey of Innovation" competition; to try and reward your contributions in this way, as we did your colleagues who took part in the first edition.

José Luís Hormaechea

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If you look at history, innovation doesn't come just from giving people incentives; it comes from creating environments where their ideas can connect.

"

Steven Johnson
Where Good Ideas Come from:
The Natural History of Innovation, 2010

2

Our innovation process

APBA gets the UNE 166002 Certification for its Innovation Management System

Last December, APBA was awarded RD&i Management System certification by AENOR, crediting our Port Authority with UNE 166002:2014 Standard compliance to do research, development and innovation activities in the areas of logistics and port business.

The award ceremony took place at APBA headquarters and was witnessed by our Chairman, Mr. Gerardo Landaluce Calleja; our General Manager, Mr. José Luis Hormaechea; our CIO, Mr. Francisco De los Santos; and AENOR Andalusia's Manager, Mr. Antonio Perez.

The **UNE 166002:2014 "RD&i Management: RD&i Management System Requirements"** certification focuses its aims on **organising, systemising and permanently improving RD&I activities to achieve maximum effectiveness and efficiency in research, development and innovation work**. Moreover, the certification demonstrates the level of quality achieved in the innovation activities carried out by APBA over the last few years, as well as the level of coordination and systemisation of innovation processes focused on striving for excellence and a greater degree of Port of Algeciras customer and user satisfaction.

The award was another milestone for our commitment to innovation. It is a renowned honour that acknowledges that APBA boasts an RD&I Management System that is both mature, competitive and valuable. Its efficiency does not depend on one particular person and supports our good practices in this field: always to strive for continuous improvement and to promote high levels of quality in the innovation activities and projects we have undertaken.

With the implementation of our RD&I Management System, it is not only the key processes that are regulated and systemised from a cross-disciplinary initiative's conception all the way through to its execution: **it has also allowed us to set up new procedures that can help improve technological surveillance, knowledge management, open innovation and the implementation of innovation back-up tools**, the keys to development and growth. We have made sure that we strategically complied with all the guidelines that make up the Next Generation Port concept. That is an intelligent "Just In Time" Port.

As Francisco De los Santos (our CIO) stated: "…this certification is yet **another important step towards systemising innovation within our organisation and integrating it as a key business process – a key factor that will give us a competitive edge over other pioneering organisations**. We have been promoting this vision for many years now at the Port of Algeciras Bay and it has helped us to manage the 70-plus ideas that we have received over recent months.

We have undertaken several pilot schemes by applying the latest trends in digital innovation with a high rate of success."

Finally, we would like to underline that APBA has relied on the help of IDOM, the company who has helped in the definition and implementation of our RD&I Management System, to make **APBA the first Port Authority in Spain and one of only a handful of Public Authorities (save Research Centres) to be awarded this certification.**

Innovation Management System
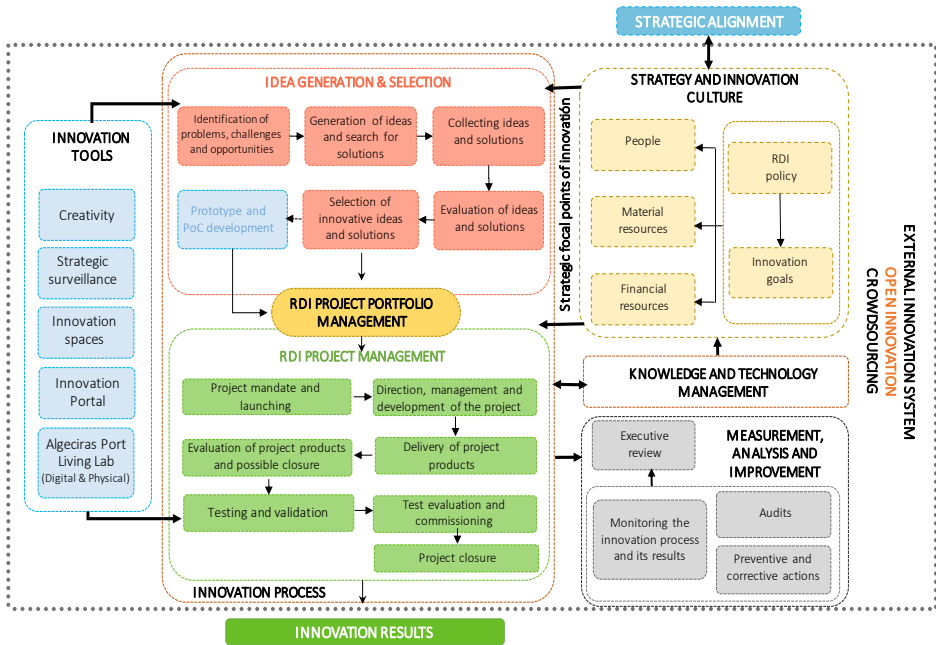
RD&i Organizational Structure
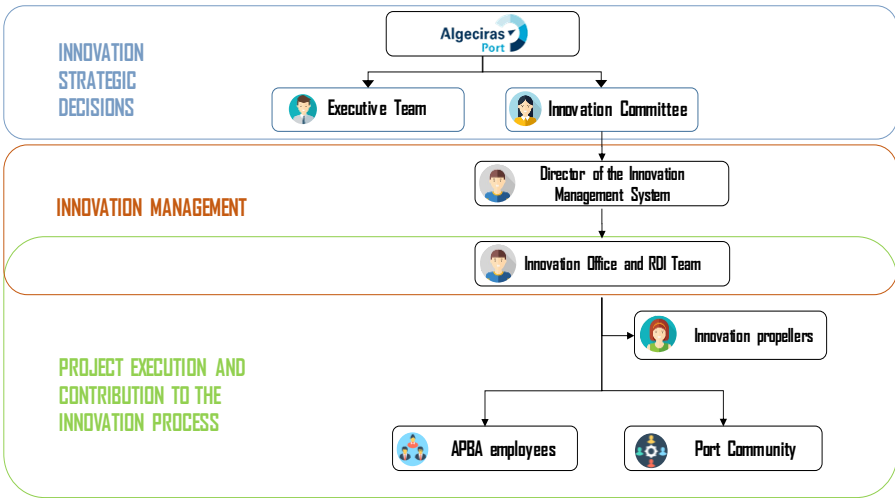
Fostering a culture of innovation

THREE EXPERTS TELL US WHAT
THEY THINK ABOUT INNOVATION

3

Listening to innovation experts

01

OPEN INNOVATION

Fernando Gago

**Innovation Director at
KALEIDO IDEAS & LOGISTICS**

Fernando Gago is the Innovation Director at Kaleido Ideas & Logistics. At an academic level, he is a Civil Engineer with an MBA from IESE and has a wealth of experience both in running technical departments and at a managerial level in various industrial sectors. Focused on real economy and social, environmental and financial sustainability, he has worked in Europe, the USA, Australia and Africa. Before embarking on the Kaleido Project, he worked in companies such as Gilsanz-Murray-Steficek and has set up companies like Loconomics, Inc. and Latitude.

[Question] Kaleido Tech has a long track record promoting open innovation: how would you define the concept - just a trend or has it become a necessity?

[Answer] I'd describe it as a way for those companies who have accepted that – *even with as much talent as you can attract there will always be someone ahead of the field somewhere else* in every technological field of interest – to make innovations. So, the best way you can stay competitive, via innovation, is to excel in your link-up strategy and dealings with these other pioneering companies; and by this, we don't always mean start-ups.

Open innovation is an idea that promotes creative thought, a culture of trust-building, knowledge transfer and innovation among entrepreneurs. The term in itself – just the same as what happens with corporate accelerators and many others in the field – is just a passing fad.

It is that focus on a real openness to the outside world – beyond labels and possibly in need of some touching-up and tailoring to the realities of each case – that we do believe is here to stay and will be a common feature of successful businesses in the future.

[Q] We agree that open innovation has changed innovation management in great US and European companies, but – according to your point of view – why should companies adopt this innovation strategy and what steps should companies who aim for success in the 21st Century follow?

[A] Open innovation is a response to changing market conditions and customer needs. Product development time – from the initial stages until its release onto the market – is becoming more and more important, due to shorter shelf-lives and increases in competition. Open innovation may help to reduce the development time by sharing activities with external partners.

The trial-and-error process does not necessarily take place at the supplier's: it may also involve the customer from its inception that gradually approaches an optimum solution that satisfies the latter's needs. This is how we can significantly increase acceptance and reduce the risk of undesirable developments.

The necessary starting-point for this model to be able to work is for business units to identify a need or real opportunity, and that they are ready to "foster" an implementation once they find the right partner. No process of this type should begin with technology as an end in itself or be imposed by innovation or corporate services to business units from above.

From there, your own innovation ecosystem should be set up to include technology sources (hi-tech companies, start-ups, tech-centres, accelerators, hedge funds, etc.) and application fields (business units, customers, suppliers, your own competitors, etc.).

With these foundations, and with all your contacts lined up, you can design and implement the right processes and tools for each case.

[Q] One of the main features of an open innovation model is the way that ideas flow: from "outside-in" and "inside-out". The former is the one that has been given most attention in business practices, whereas the "inside-out" option requires businesses to allow their own ideas to leave the premises. In this context, how can businesses keep their competitive edge and what does this option bring to them – is there not a risk of competitors stealing ideas?

[A] Openness always implies a risk of someone copying you. Although respect for confidentiality of certain kinds of information is, of course, needed in these types of process, we think that *openly sharing fields that have a potential for improvement helps more than it hinders.* The company should understand clearly where there is an edge to be had and where there isn't, and make a value proposition to the potential tech partner, not only vice-versa.

It's our view that what is generated at the end of the day is added market value, where – on the one hand – technology plays a part and – on the other – your knowledge of the sector and its needs, and your ability to do real-world testing in an established commercial network plays another. To be able to materialise that generated value together entails a relationship of trust that will have to be vested in a contract as more steps are taken. Trying to have every scenario covered by a contract, even before the first indications of feasibility and potential arise, can sap your energy – and with it, the opportunity – almost before you begin.

This doesn't mean that intellectual property isn't important. It simply means that it should be a part of this open environment and can be shared when justified. Property rights should enable the exchange of knowledge, as both partners will be more eager to hold cross-license agreements and share developments with partner companies.

[Q] Returning to the "outside-in" model, what role do start-up accelerator programmes have? What are these programmes and who do they bring to organisations taking part?

[A] They are programmes that help organisations to work with a group of companies to solve specific problems. Corporate accelerator programmes can play a huge role in the way that a company innovates, multiplying its capacity and exposing it to more dynamic partners. They can also be valuable to start-ups to get mentoring, knowledge of the sector, access to markets, financial backing and even direct investment.

In our experience, the degree of definition of challenges and the partnership pursuit strategy are decisive factors if the programmes are to be a success.

It's very difficult to see results in a reasonable period of time if you head out with only a very general phrasing of a challenge and an open call to start-ups. You should rely more on investing time and energy by *defining the challenge, its minimum scope and potential and the conditioning factors for its execution very clearly, and – with this information at hand – going out and actively looking for your best travel companion*.

[Q] Recently various ratings for the most promising start-ups have appeared in Spain and in the logistics sector. According to your opinion, what are the most innovative sectors and what kind of tech solutions are seeing more success? And – in the logistics field – what are the technologies that have the biggest impact for you?

[A] On an applied technology level and staying with start-ups, the most digitalised sectors like finance, insurance, health or e-commerce are way ahead; however, start-ups and the capital invested in them point more and more to industrial sectors and B2B. At the same time, the last mile delivery concentrates most of the noise that is being generated in the world of startups in Spain.

As far as technology itself, being an industry where lots of agents intervene and handle such quantities of information, all of those involved in picking value out of the vast amounts of data that haven't been worked until now are the ones that are having the greatest impact, because of the amount of fields they find matches in (process optimisation, risk analysis, asset saturation, etc.). Automation also plays a significant role.

[Q] Finally, how do you view Public Authorities and, in particular, Port Authorities on the open innovation matter – what should their strategic wager be?

[A] *The participation of Port Authorities within these innovation ecosystems is essential.* On the one hand, they are necessary agents in the testing and application of lots of the technologies pushed forwards by companies who deal with ports and, on the other, they have the potential to be the driving force behind this model as a tool to guarantee their competitivity. With the volume of data they handle, the amount of trade relations that they set up and the importance of their assets, ports have a huge potential for open innovation.

02

INNOVATION CULTURE AND PPI

Marta Albertí

Innovation Consultant at IDOM

Marta Alberti is an Innovation Consultant at IDOM with more than 15 years of experience in RD&i project management for public and private institutions. With more than 10 successful cases of implementing and operating RD&i Management Systems, she combines her work at IDOM with lecturing at UPF (the Pompeu Fabra University) and as an innovation workshop speaker and enabler.

[Q] First of all, what is innovation for you?

[A] People are talking a lot about innovation at the moment, but we often confuse innovation with research or – at the other extreme – with continuous improvement. For me, *innovation is successfully exploring new ideas, I mean, bringing something new to the market, whether it's a product, a service or a business model.*

[Q] How do companies view innovation – something vital or an added extra that's only within the reach of the few?

[A] The perception of innovation by companies is a very diverse concept. Today, I would say that there is a significant awareness about innovation: the majority of companies understand that it is a key competitive element. Nevertheless, not all of them can include it in their day-to-day life, as it demands a huge cultural and mental change. There is also the fallacy that determines that only large companies can innovate, but – happily – there is a growing network of smaller, high-tech companies that are basing their business on technology and innovation, and helping this paradigm shift.

[Q] What role does General Management play in a company's innovation process?

[A] If you want to make a change to any organisation, the Management's commitment is a crucial condition, but that alone is not enough.

The Management should not only support innovation but drive it, acknowledge it and create the communication channels and work spaces that allow people in an organisation to innovate. However, you also need the type of people who are willing to take the risk of innovating and making the effort that launching something new entails.

[Q] The innovative transformation of companies requires people, technology and management: what do you think is the most important of the three?

[A] People are, without doubt, the most important. An excellent management process may not be useless if there is not an ability to create ideas and innovation projects that can be managed pursuant to that process. Technology is also important: it's management's most important back-up tool and can be one of the main levers towards process, service and product innovation. But we have to remember that *not all innovation is technological*.

[Q] All of us who are involved in innovation face people saying things like "it's always been done this way" or "it works well like it is" every day. They're what we call "innovation killers". What skills and attitudes do a team need to be able to overcome these obstacles and make sure that a new process or method can be successfully implemented?

[A] Yes, this is our reality a lot of the time and, therefore, our main challenge is to break away from pre-set values. To do this, the most important skills are the soft ones: the ability to communicate, lead, work in a team. The innovation manager has to be able to convince and drive. There's no better preacher than a converted one: if we can change the mind of someone who is against innovation through quick wins, then we'll gain an ally in implementing our new process.

[Q] Lots of companies invest time and money in in innovation projects that fail soon after being launched, or that don't return the results that we hoped for: what are the main reasons for their failure?

[A] Very often, companies don't make enough of an effort during the preliminary stages of an innovation project. A company's capacity for investing in RD&i is shackled, both at a financial investment and time level, the latter of which is one of the common constraints. This is why it is key to choose the innovation projects that you're going to launch well. Managing your project portfolio is useful for systemising these choices and making them on the grounds of objective criteria that help to minimise risk. Another reason for quitting is underestimating the effort needed to take on an RD&i project, which comes about from not doing a good analysis beforehand.

[Q] In your experience, what is the key to success in innovation culture advancement?

[A] There is no one recipe, nor one single key. The most innovative companies usually combine Management commitment with a high degree of trust, a flexible and dynamic style of working, and non-stop communications exercises to visualise the importance of innovation. *Innovation culture is a many-faceted concept and difficult to copy – everyone has to make their own recipe!*

[Q] Nowadays, we're starting to see a new dichotomy: entrepreneurs who dare to create something new and governments that dare to be the first to buy it. I'm talking about Public Procurement of Innovation (PPI): what is it exactly and what benefits does PPI bring to an organisation?

[A] It's the tool by which a public authority commissions a new technological development, that's not available on the market yet, to respond to a need.

It's beneficial both for governments that drive it and for companies that take part in it. Firstly, it's useful for acquiring ground-breaking products and services adapted to their needs. Secondly, it allows them to innovate by already having a first customer who will not only finance the innovation but will also be a benchmark for future sales of the product.

[Q] What is your view of PPI in Spain at the moment? And what about the Port of Algeciras?

[A] There are some very interesting PPI initiatives in Spain, but the tool is not as widespread as we would have hoped. Some sectors, like health, have been pioneers, with noteworthy projects like the one developed by the Galician Health Service for instance. However, PPI may be attractive in areas that up to now haven't really been exploited as much as they could: education, waste management, the energy or water sectors, among others. The Port of Algeciras has been a pioneer in the development of

PPI initiatives in the port sector and we hope you will become a benchmark so that other ports and transport infrastructure operators start employing PPI more and more.

[Q] Where should Public Innovation Policies point towards?

[A] All the indicators suggest that Spain is lagging in innovative material with regards to other countries inside and outside of Europe. It is a reality that, over the last few years, public investment in innovation has been greatly reduced and the impact in terms of results has been undeniable. So, what's needed is an effort at a government policy level to signal out strategic sectors that have the capacity to drive forwards. We all know cases of RD&i projects that have been done without identifying a clear market need or demand, meaning that the handover of those projects' results onto the marketplace has been made impossible. To avoid this type of situation, innovation policies from the demand side – like PPI – are an attractive option.

[Q] What would you say to those who want to encourage PPI – which things should have a clear presence in the institutions that want to embark on a PPI venture and don't want to die trying?

[A] Fortunately, there is a favourable legal framework for PPI in Spain today, so those agencies that want to start using this tool should worry themselves more about other factors, like defining their own procedures, identifying challenges they may be able to respond to through PPI projects, and getting to know available financial instruments in order to materialise their purchasing processes.

[Q] Finally, what is the potential of Government or Corporate Venturing – do you see structuring from the Public Authority side feasible, and what formulas would you recommend the Government to work together with start-ups?

[A] Over the last few years, there has been clear support to promote venturing by private corporations, with relevant examples like Telefonica or Repsol. The same approach is being made by the public sector, not only in transport – with examples like Ports 4.0 or TrenLab – but also in other sectors, although the handover of the private approach to the public sectors is not as apparent or nimble. One of the difficulties that government and start-up co-working faces is the different pace that each one needs: whilst public authorities tend to lengthen their decision-making processes due to the very nature of their organisations, start-ups need to move fast, take decisions, test and move on. So, *I would recommend authorities who want to work with start-ups to define a specific procedure, different to their normal modus operandi, where decisions are taken much swifter.*

03

INDUSTRY 4.0

Yoann Yvon

Head of Digital Interaction and Blockchain Leader at SOPRA STERIA

Yoann is a software architect who specialises in innovation, mobility, and Augmented Reality (AR) and Virtual Reality (VR) technology. He is a member of the Sopra Steria Group Digital Transformation office, Interaction Digital's team leader in an area that focuses on technologies that change the relationship between humans and machines to impact customer process optimisation and to provide better opportunities to create new services.

[Q] We are said to be facing a technological revolution that is set to change the way we live, work and interact: the so-called Digital Era or Industrial Revolution 4.0. How would you define this revolution – are we facing a new era?

[A] Over the last few decades, we have set ourselves all sorts of computer chores: e-mails have multiplied, we share information on digital forms and have all kinds of applications on our cell-phones – one for each aspect of our life.

However, I've got an up-beat opinion about what the digital era brings: it came to free us from all these chores and help us create solutions to serve people and society. Facts are automatically generated thanks, for instance, to computer vision or linked objects: artificial intelligence enables us an understanding of business that goes way beyond human analysis, and interaction with the digital world has become more natural, friendly and immersive (interface-free, 3-D vision, voice recognition, etc.).

To sum up, I think *the digital era is going to allow us to be more efficient, but – above all – to expand as human beings, allowing us to nurture our scientific, technical, psychological, ethical or artistic lifeblood, and grow together as a society.*

[Q] The automotive, health and commerce sectors are the ones that invest most in Industry 4.0: do you think that the revolution has come to the port-logistics sector and what do you think will be the stand-out disruptive technologies in this sector?

[A] Yes, without a doubt, and *APBA's various initiatives in innovation – that make your port a digital benchmark – show that the revolution has reached the sector.* The data obtained from machine connectivity, security, and process automation are the pillars of this transformation. It gives us the ability to anticipate events and coordinate the whole business ecosystem, which dynamizes the sector and makes it more competitive. What's more, the knowledge extracted is not going to be restricted just to port business, but open to all the value chain, and this is going to increase the efficiency of everyone involved.

We can supplement all this intelligence by giving it physical capabilities (self-driven vehicles, automatic access systems, robots, etc.), in the way that makes up a reliable, secure, sustainable and – therefore – differential platform.

[Q] Let's talk, for example, about Augmented Reality (AR) and Virtual Reality (VR). Apple's CEO – Tim Cook – commented in an interview that AR is the most important of the two, because it allows people to have more presence in the use of the technology.

What is each one about, and which one do you think is going to have the greater impact in the industry?

[A] Each one has its advantages. In the case of VR, we are projecting ourselves into an environment that is detached from the real world, but without boundaries. We use it specially to transport users into a world that portrays a real environment, which adds a lot of value to training situations, coaching or distance learning.

As for AR, they add detail to the user's viewpoint, whilst keeping a link to the real world. One of the most important advantages to this type of technology is that it allows information to be contextualised and thus making it more intelligible. It also allows people to work together, as we can continue to see other users and share virtual scenarios in our own physical space.

[Q] Could you tell us briefly about a practical case where these technologies have been applied successfully – do you know of any applied to the port-logistics sector?

[A] One possibility would be a solution to monitoring facilities, production and assembly processes, or even ship proximity warnings, seeing that it could give us an augmented view of the situation under low visibility conditions.

It is possible to use GPS data from different vehicles and re-broadcast the state of the port to the user's vision in real time, regardless of the weather conditions.

[Q] In your experience, do you think that institutions, governments or corporations really believe in the benefits of these two technologies enough – what are the challenges ahead in terms of their adoption by organisations?

[A] On the whole, all of them can see the benefits of using these technologies in the field. Nevertheless, for them to be widespread, *we should advance towards easier development solutions and integrate them in current-day systems.*

We are working on platforms that enable the use of these new realities as an integral part of information systems. Our aim is to make their use democratic by giving the end-user the ability to create their own experiences and break with the development models we've inherited.

[Q] Nowadays, another technology that's making a lot of noise is Blockchain – how would you briefly explain what Blockchain Technology is and why it is so successful?

[A] *Blockchain Technology provides a new way of sharing information reliably.*

You can compare it with kind of digital marble slab where everyone can 'engrave' information (signed and with a time stamp) and where everyone can immediately see the information of the other authorised members' slabs reflected on the network.

This characteristic lends it a credible nature that makes it very easy to pool information among many players involved in a process without having the risk of altering the information. It makes access to information democratic and so, therefore, it doesn't heap the burden upon a single member of the group or need to gain third-party trust.

[Q] How do you think this technology is going to affect the future of logistics – can it be applied significantly to the port-logistics sector?

[A] *First of all, it's going to enable data-sharing in logistics events. From there on, it's going to improve analysis of situations past and present. It's also going to encourage contributions from all the players involved in the port-logistics process, by making the ecosystem more dynamic, efficient and lay the ground for the creation of new added-value services.*

[Q] Do you think that – as of today – companies and organisations have shed off their fears, and actually trust Blockchain Technology – is the port network ready for this huge change? And what added stumbling blocks does the port-logistics sector face in this new digital environment?

[A] One stumbling block may appear in the setting-up of common financing structures to get this type of solutions running. By their very nature, these solutions are created from a point of view of improving the whole ecosystem and should begin with a pooling of very different players from many-varied outlooks.

Culture is shifting and we already understand the value of technology better regards improving processes globally to the benefit of everyone.

The next step is to encourage the creation of process-focused associations and consortiums to finance the projects that unfold.
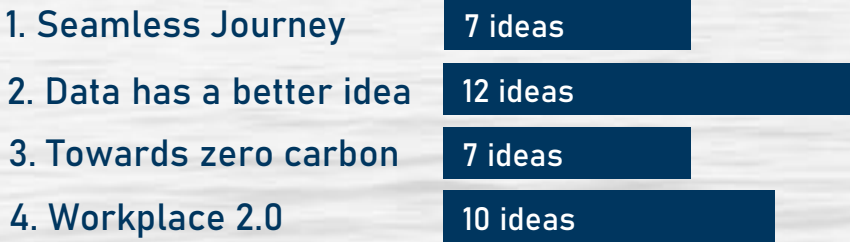
4

An overview of the figures

IDEA GENERATION & SELECTION

36 IDEAS received

60% EXTERNAL proposals

21 Participants

31 Selected for the 2nd PHASE

17 BUSINESS CASES

97 ideas received from 2017

25% gets into RD&i project portfolio

2019

4 Challenges

1. Seamless Journey — 7 ideas
2. Data has a better idea — 12 ideas
3. Towards zero carbon — 7 ideas
4. Workplace 2.0 — 10 ideas

5 Focal points

- 40% F1. Port-logistics operations
- 30% F2. Sustainability and energy efficiency
- 5% F3. Resilience and port safety and security
- 5% F4. Innovation culture and management
- 20% F5. Excellence in corporate management

RD&i PROJECTS

2 Started projects

1 Finished project

OPEN INNOVATION

29 Start-up proposals

Feasibility and fit analysis **76%**

Ideas with Business Case **34%**

3 Started Pilots

SUPPORTING TOOLS

INNOVATOR RANKING

Daniel Andrades	11 ideas
Francisco de los Santos	10 ideas
Jesús Medina	5 ideas
Jesús Matute	5 ideas
Paco Saucedo	4 ideas
Dani Hernández	4 ideas
Enrique Martín	3 ideas
Jorge Lopera	3 ideas
María Román	2 ideas
Javier Moratalla	2 ideas

INNOVATION PORTAL

+60.000 visits

+8.000 new users

170 REGISTERED users to the Portal

281 SUBSCRIBERS to the newsletter

INNOVATION CULTURE

7 Workshops

2 Innovation Awards

Organized our first Open Innovation Day

Launched the second edition of our Innovation Awards

TRAINING

Workshop:
"Design Thinking
¿Who is your user?"
Focused on the
Costumer Journey Map

IMPACT

15 Press appearances of innovative activity

23 accumulated themes

14 Participations in events and conferences

8 cities – 6 countries

More than **2.000** attendees in total

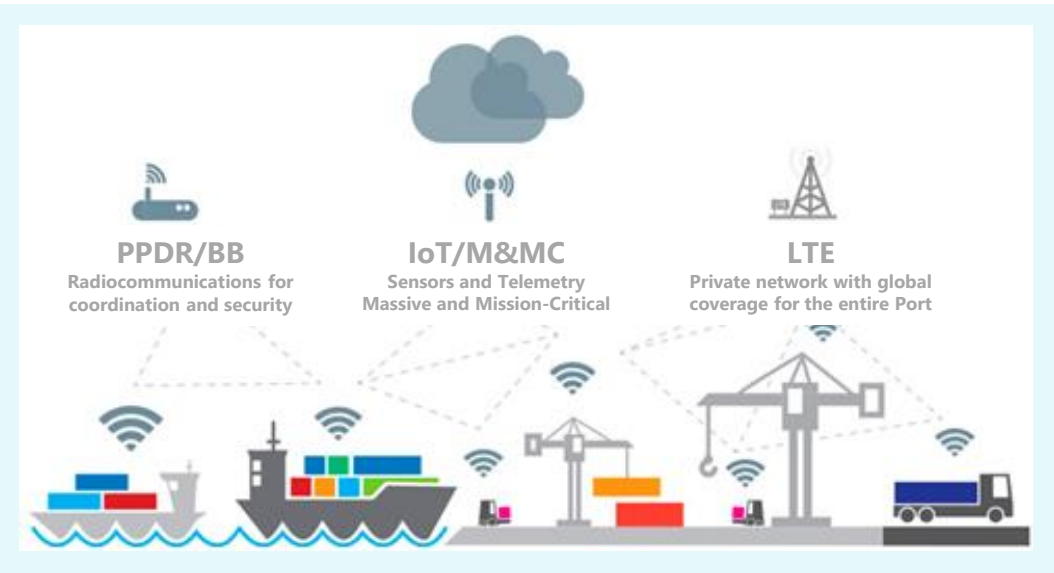Perception of the APBA as an innovative company by its employees

7,25

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One of our strategic aims at the Port of Algeciras Bay Authority (APBA) is to reinforce innovation in all our business fields as a key factor for **improving competitivity**. This will help us adapt and meet the constantly changing nature of the market systematically and provide **novel solutions to add value to the service we give our customers and to the organisation itself.**

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5
RD&i projects

Advanced Radio Communication System
[State: Deployment Completed]

PPDR/BB
Radiocommunications for coordination and security

IoT/M&MC
Sensors and Telemetry Massive and Mission-Critical

LTE
Private network with global coverage for the entire Port

The ARCS project's main aim is to **modernise our radio equipment, telecommunication services and data processing** as the technical medium for APBA and Port Community activities to help coordinate field operations, security and control at our port.

In doing so, we hope to meet a series of **intentions**:

- To improve radio communications involved in the security and control of our port, shaving decided that standard (or soon-to-be-standardised) 3GPP broad-band is the best option for radio-communication technology.

- To convert this into a tool to aid routine field-work procedures and emergencies by coordinating and broadcasting relevant and accurate information between the response teams in the field.

- To integrate new means of radio communications within a global information processing environment, by making them into a single block that incorporates the other APBA communication and data-sharing systems currently in use (or forecast to be in use in the short-term).

- To improve our users' experience and allow them to grasp the reality of an emergency by exchanging real-time multi-media information and video broadcasting.

- To implement roaming operational team integration and co-working services and hubs.

- To get ready for an ecosystem of sensor and actuator equipment data-routing by using standardised 3GPP- based IoT communication protocols.

We opted for Huawei technology to install our long-term evolution (LTE) advanced communications system with a private infrastructure and to apply it to the operational coordination of the Port of Algeciras Bay's facilities. It is generally considered to be the most advanced system on the market for this kind of services.

Our ARCS system is the **first private European port LTE network** that incorporates standardised broad-band for coordination and emergency operations and is prepared for massive, mission-critical IoT.

The end-product will be a **radio-accessible infrastructure network** made up of multi-purpose radio terminals or locations in an Operations Centre that is available to any of our Port Authority's hierarchy or services and having the following **features**:

- 3GPP Teleservices (telecoms services that provide full communications capabilities between users) and supplementary services as detailed by TETRA and the Critical Communications Associations, and ratified by all associated groups.

- High band-width data services and terminal versatility for encoded data-processing, and high-density narrow-band services for telemetry and sensor systems.

- High-level access security to services and channel encoding, with exclusive operational frequencies and high-availability devices.

- Endless working expansion prospects: from data-acquisition via NB-IoT and LTE-M standardised services to any query or reporting service that is centralised at our Port Security Control Centre.

- Native integrated information systems that interface with other radio media and communications systems that are used by APBA (maritime radio, Unified Communications, public telephone services).

- Specific user applications that optimise data-sharing with Port Community roaming teams and govern data format, day-to-day routines, and relationships.

- A wealth of user experience, due to its similarity with 4G handsets and public services, and due to the fact that it uses broad-band communications services – such as video conferencing – that help grasp a situation from the perspectives of the command-control centres and teams in the field.

The Telefonica-APTICA-Tecnicas Competitivas joint venture has carried out the system's implementation with the specialist help of consultants Xaivo. At the time of writing the report herein, the system is currently in the testing and validation phase.

In the light of us working together towards Innovation within our Algeciras BrainPort Strategy, Mr. Victor Wang and Mr. Alberto Fraile – Huawei's logistics managers – visited our facilities at the Port of Algeciras Bay last June. They had previously had a meeting with our Chairman – Mr. Gerardo Landaluce, our CIO – Mr. Francisco De los Santos, and our Business Development & Commercial Manager – Mr. Nicolas Martinez Andion, as well as with Ms. Elvira Saint-Gerons – Agencia IDEA's Project Manager, and Mr. Jose Luis Zambrana – Manager of Algeciras Bay LAZ-Andalusian Logistics Network.

Container Value Chain Algeciras
[Status: Validated Prototype]

Currently, operational processes that sustain world trade and logistics chains feature a high inefficiency rate, as well as a huge reliance on paper-based document processing: witness examples of such inefficiency in typical cargo delivery times, missing cargo and orders, or lengthy down-times at ports, terminals and logistics warehouses, together with inconsistent and outdated information, all of which entails high cost and poor service quality.

In the specific example of the container value chain, various improvement opportunities have been identified by container industry leaders and top players to this end: i.e., by increasing cargo transparency and visibility levels on its way through logistics hubs and facilities; by improving coordination between agents; by promoting formulas that enable data-sharing; by improving the predictability of logistics chains; and – most relevantly – by seeing the need for industry-wide agreement and standardisation, both at data/event and interoperability levels between digital management systems.

So far, staff at the Port of Algeciras Bay have identified several areas for improvement that should contribute to **optimising import-export processing of containers** on their way through our port by offering visibility to the cargo flow and data-sharing among local players.

It was in this context that the aims of our pilot project were focused on **improving real-time container flow visibility and tracking** on their way through our facilities at the Port of Algeciras Bay by trying to **minimize the down-time of all the players and agents that take part in the container value chain**.

This is how the PortCDM idea came to be applied to our land operations. It reaches our hinterland to such an extent that even depots, import-export businesses, shippers, in-house and outside terminal operators, shipping lines, customs agents, consigners and consignees, freight forwarders, our own Port Authority and BIP, among others, came to apply the technology.

> **Port Collaborative Decision Making** is an idea that takes its inspiration from the aviation sector, where flights and airport operations are so successfully and seamlessly coordinated, enabling everyone involved in the call-to-port process to share real-time (or almost real-time) data about significant events.
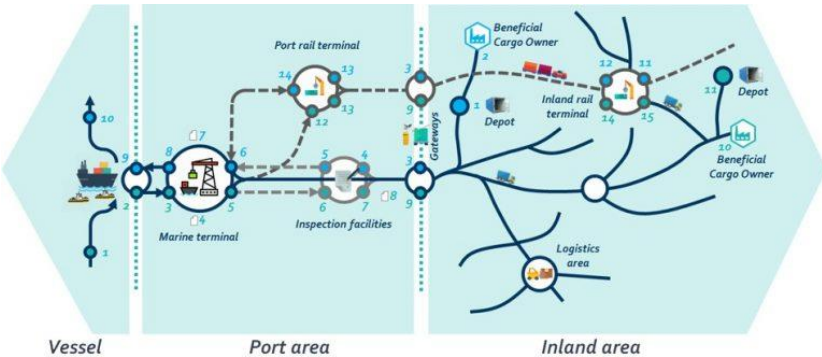
The **scope** of the project was divided into two parts: firstly – with the help of GS1 Spain – we did an in-depth breakdown of port-logistics processes that are involved in an import-export container's journey through our port, and proposed a standardisation for the main events related to container logistics. Secondly, we developed and implemented a collaborative real-time data platform for all the players that intervene in the Port of Algeciras Bay's container value chain.

The development of the prototype software was carried out by using a prototyping cell following Scrum framework methodology, all of which required eight fortnight-long sprints. We then did a proof of concept test by linking up several Port Authority operating systems, as well as a container terminal's (TOS), a customs agent's and a shipper's operating systems to our prototype. Finally, the **pilot test** was done over two phases in May and June 2019, enabling us to monitor a total of five export container shipments of 35 containers in real time.

Once the project had been finalized, taking into account the consultancy and development phases, we proved that a project like CVCH is essential for use as part of players day-to-day business when involved in the Port of Algeciras Bay's container industry.

In this light, the following are the **conclusions** that we came to:

- Most of the players' initial needs and inefficiencies throughout the value chain process could be solved by providing a **visibility and transparency** of the events associated with the cargo flow through our port by sharing real-time data.

- **Sharing** the most relevant data in case of event changes may help anticipate decisions and re-plan operations with minimal consequences, such as additional costs.

- This kind of digital solution, such as our prototype platform, can help logistics supply chains become **smarter** by increasing their predictability, transparency, and throughput and delivery speeds.

- Digital solutions help **fine-tune** value chains continually and in real time.

We have confirmed that such a solution – together with PitStop or Pronto type platforms enable an **end-to-end visibility** of the cargo's journey through a port and throughout its logistics chain.
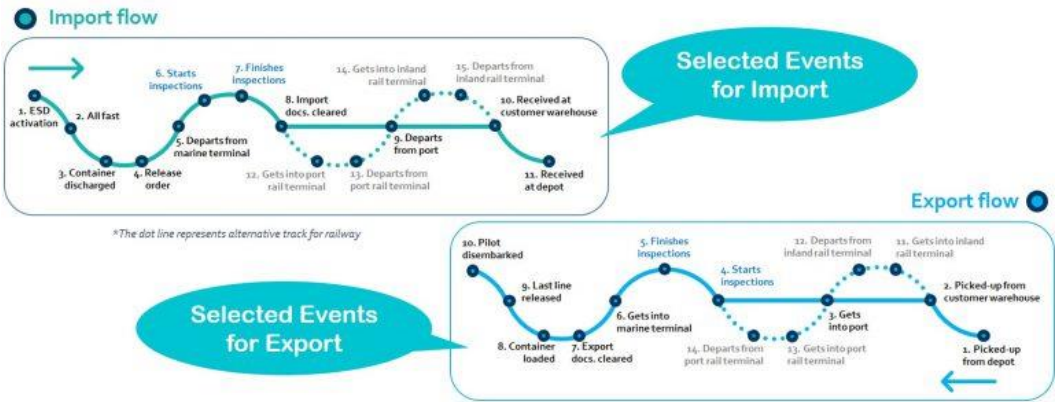
Port Risk Optimized Advanced System
[State: Under Project Tender]

With our PROAS project, we aim to develop a **Ship & Infrastructure Operations Forecasting System**. The system is to be based on a predictive safety and efficiency tool for port operations that can assess the physical environment, the planning of ship calls to port and scheduled operations.

Due to the fact that there are currently no known techniques or commercial tools that can comprehensively cover either the functional or technological needs that we have posed, the project was begun under the auspices of **Public Procurement of Innovation.**

Port efficiency and safety have a direct impact on the supply and logistics chains they play a part of: a port's actual surroundings (wind, waves and currents, etc.) can wreak havoc with port business (production losses, operational shut-downs), with adverse financial consequences.

Based on the available data of the physical environment gleaned from our Independent Measurement, Forecast & Alert System (SAMPA) – as well as from other specific supplementary data – APBA would like to identify and predict the impact that the elements have on our port operations.

At present, ship operability in ports is restricted by a threshold value that is a function of fixed weather values or specific ship movements (maximum wind speed, maximum wave height, etc.). The evolution that we are proposing at APBA is to tie these threshold values to efficiency and safety pointers, and also to terms of Areas of Operational Interest (AOIs): i.e., the elements, ship-type and the operation itself.

In conclusion, this pioneering tool should enable the players involved in port operations to anticipate adverse scenarios, whether by re-planning operations and assigning resources to supply a desirable level of service or by reinforcing the safety and security measures at our port

Hopefully, the project's end-product will be a **predictive tool** based on forecasts from the elements that can give us an insight into their impact on our port's operational safety and efficiency, port call planning and scheduled operations.

The software tool that is found to contain the ground-breaking solution should provide safety and efficiency indicators (possible failure modes, operational shut-downs, operational performance, etc.) in order to determine the beginning and length of port operations with greater accuracy.

Below is a breakdown of the **intermediate results** we aim to achieve:

- Key safety and efficiency indicators for each operation: to be gleaned from the historical analysis and in consultation with logistics businesses; to be used to determine the operational safety and productivity status.

- Methodology to assess said indicators: a process is to be defined to evaluate and predict operational safety and efficiency according to environmental, operational and ship-response conditions.

- Operational safety and efficiency thresholds: the previous methodology is to be employed to glean the chosen limit values and indicators.

- AOI modelling and tool development: a model is to be developed to enable us to predict indicators. This should be submitted by software that, initially, works on one specific AOI (the prototype) and then becomes extensive to the remainder of AOIs in later stages.
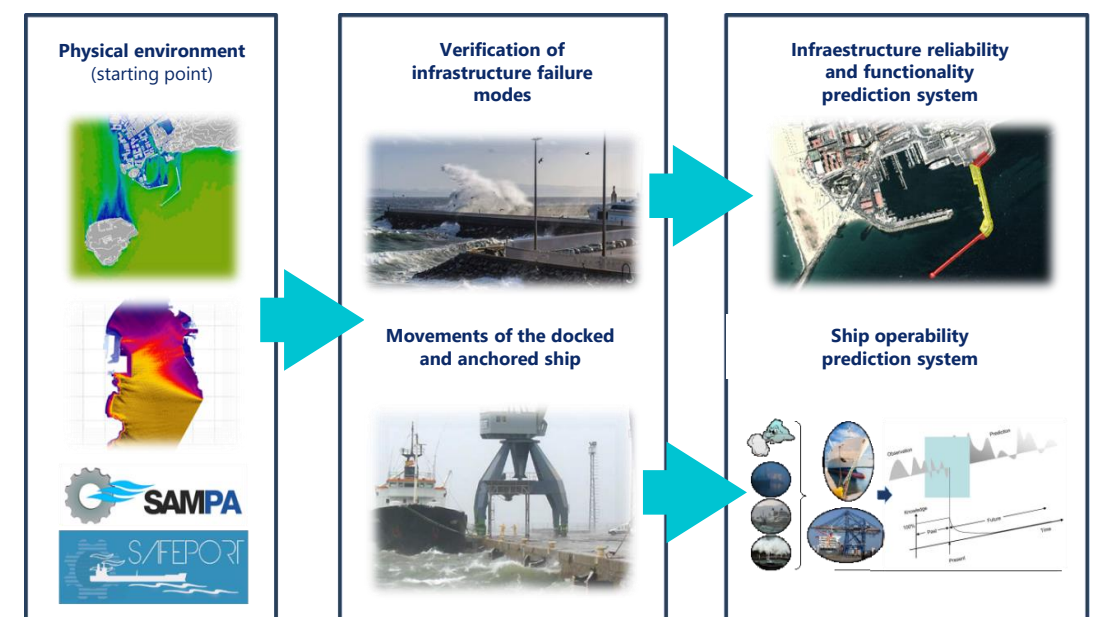
The **end-purpose of the project** should ultimately allow us to:

- Determine operability with at least 48 hours' foresight, and take into consideration any possible shutdowns that affect productivity.

- Define operations via safety and efficiency indicators.

- Simplify the main players' decision-making processes when carrying out loading and unloading, technical-nautical or ship supply activities.

"As well as the novelty and impact that this soon-to-be developed and implemented solution will have on Port of Algeciras Bay business, the project has become a PPI milestone – the **first innovation project tendered by Public Procurement of Innovation and Competitive Dialogue in the history of the Spanish Port Network.**

"The tender process was tailor-made for such innovation projects: projects that encourage supply-side innovation and open a formal 'dialogue' with the industry itself to decide on a solution and prepare final specifications together."

Francisco de los Santos
APBA's CIO

| Physical environment (starting point) | Verification of infrastructure failure modes | Infraestructure reliability and functionality prediction system |
| Movements of the docked and anchored ship | Ship operability prediction system |

SAMPA

SAFEPORT

Port of Algeciras Bay Optimisation by Predictive & Prescriptive Intelligence
[Status: Market Research Undertaken, PPI]

The Port of Algeciras Bay's day-to-day business and the logistics chains that it involves generate a huge amount of data and information – both documentary and commercial – that arise from the actual flow of cargo. This entails not only port-logistics operational and procedural data but also data from cell-phones, sensors, tracking systems, video imagery and social media, all containing very valuable information for business. Nevertheless, if we wanted to incorporate all of this into our **decision-making** process – both strategically and operationally – for the body of users and customers who play a part throughout the cargo value chain, the information would have to be stored, prepared, processed and analysed in a streamlined and efficient way.

This is how we came to imagine having an **ambitious digital platform that would be able to orchestrate all Port of Algeciras Bay operations in an optimum, holistic and synchronous fashion. It would require an intelligent decision-making support system** to back it up: a combination of innovative analytical techniques and predictive simulators, together with state-of-the-art artificial intelligence to help streamline cargo-flow port-logistics operations – both for containerised and ro-ro goods – that are the essence of our logistics hub.

Over the last few years, **technological innovation and digital transformation** have witnessed unprecedented leaps forward in data-mining (machine-learning and deep-learning for modelling, and identifying and predicting patterns; AI applications that have become more user-friendly; augmented analytics; all used by people to take decisions based on recommendations) to provide tailor-made information that adds value for end-users and customers.

At APBA, we thought it was the right time to try to define the **working scope** that our ambitious "Port of Algeciras Bay Optimisation by Predictive & Prescriptive Intelligence" RD&I project would have. Its **main aim** would be to streamline all the operational processes that general cargo (transhipment and import-export cargoes; and containers, UTIs and flatbeds) throughput are subjected to at the international logistics hub that our port represents.

At the same time, the operational streamlining process would entail the following **specific aims**:

- Improve productivity and efficiency of all port operations involved in general cargo (containers and ro-ro/ro-pax cargoes) on its way through our port from a holistic perspective.

- Improve the allocation of port resources shared by our users and customers.
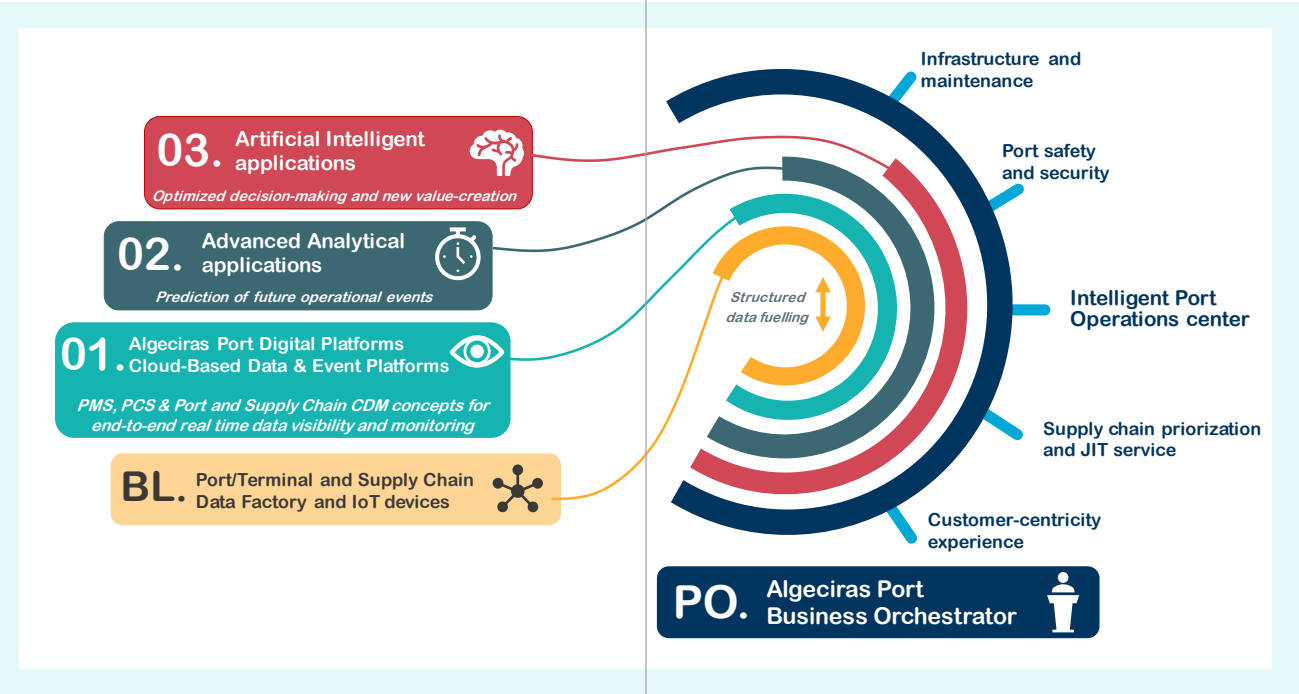
- Improve energy efficiency and environmental sustainability in por-logistics operations.

- Improve the rolling cargo (ro-ro and ro-pax) and container value chain competitivity for all the companies, products and services that are present at our port, from a heightened operational visibility and predictability point of view.

In conclusion, our idea in taking on this project is **to improve the following KPIs** (key performance indicators):

- Port of Algeciras Bay waiting and down times for ships, HGVs, trains, and port and technical-nautical services.

- Cargo transit time through our port.

- Energy consumption and emission levels

- Logistics chain efficiency and reliability throughput ratios at our port.

From an overall perspective, **we expect general service quality and operational competitivity to be affected, along with the port services offered by the Port of Algeciras Bay (as an innovation focal point), both in transhipment and in import-export throughput (containers, ro-ro and ro-pax traffic).**

We were faced with guaranteeing the project's feasibility, managing the risks associated with innovation, and gaining an in-depth outlook into the concept that would eventually help us to draft specifications for a **Public Procurement of Innovation** (PPI) or Innovation Joint Venture tender (as long as we complied with Article 177, Public Sector Contracts Act 08/11/2017). We opted to carry out **Preliminary Market Research** (PMR), which saw six Spanish and international companies involved in the process in September 2019.

By the time the process had come to a conclusion, we had gained some valuable lessons for APBA, as can be seen below:

- There was no ready solution on the market that could meet the direct functional needs that APBA had expressly presented.

- A PPI or PMR procedure would be the ideal option.

- A prior data Assessment process would be needed, as far as APBA's proposed data management and mining were concerned, before launching an AI-based modelling project.

At APBA, we therefore started working on the right steps to define and implement a Data-Analytics Strategy and our future action plan, to begin building a solid foundation for more advanced AI-based data-analytic models that would then be developed and deployed to incorporate simulation tools to help our decision-making processes.

The RD&I project is a step further towards the **next-generation concept of our port: smart (data-based decision-making), seamless (physically-uninterrupted total logistics chain flow integration) and self-reliant (high degree of automation).**

The above concept should materialise once our **Digital Operations Orchestration Platform** comes on line: it is a "platform among platforms", where APBA will be able to play the role of conductor from a neutral perspective and command the mission to maximise the Port Value of Algeciras Bay.

The **"orchestration" ideal** may have several stages: during its simplest stage, it will be focused on improving coordination among the various port areas to minimise down-time and any unnecessary waiting suffered by ships, cargoes and land transport.

A more advanced version of the platform might set up operational priorities to reduce this down-time "smartly": i.e., using "dynamic" business rules as per the established criteria (a ship's cargo breakdown or fuel type, and compliance with certain Service Level Agreements, etc.). It might keep advancing to incorporate higher capabilities (dynamic pricing, business excellence bonuses, etc.), all of which would go towards maximising the Port Value of Algeciras Bay.

Digital Port-Logistics Service Platform (DIGITAL PORT) [State: Under Development]

APBA is assisting in the development of the **Digital Port-Logistics Service Platform (DIGITAL PORT)** project within the framework of the Economy, Industry & Competitivity Department's FEDER-INNTERCONECTA Programme. Co-financed by the Centre for Industrial Technological Development (CDTI) and EU Structural Funding, its aim is to pave the way for digitalising services in the port-logistics field.

The project is coordinated form the Ingenieria y Soluciones Informaticas (ISOIN) company and is partnered up by Emergya Ingenieria (EMERGYA), Easytosee Agtech (EC2CE), Secmotic Innovation (SECMOTIC), and Ferrovial Servicios. Deadline for completion is set for this coming December, having begun in September 2018.

The **DIGITAL PORT Project** visualises future ports as embedded in their host cities. It addresses the design and development of an innovative modular platform to provide **enhanced solutions for sea-port-city interfaces** by adding value to improve efficiency and streamline logistics processes among the players involved in the port environment. It employs state-of-the-art technologies, such as Big Data, IoT, AI, GIS 3D, Blockchain, Open Data and Cloud applications.

The co**operation between APBA and the ISOIN-led syndicate** has specifically focused on the development of **a simulation tool for our yearly Strait of Gibraltar Crossing Operation** and, even more specifically, during the **ticket exchange** periods that take place on the days that we see the biggest surges of passenger departures from the Port of Algeciras Bay.
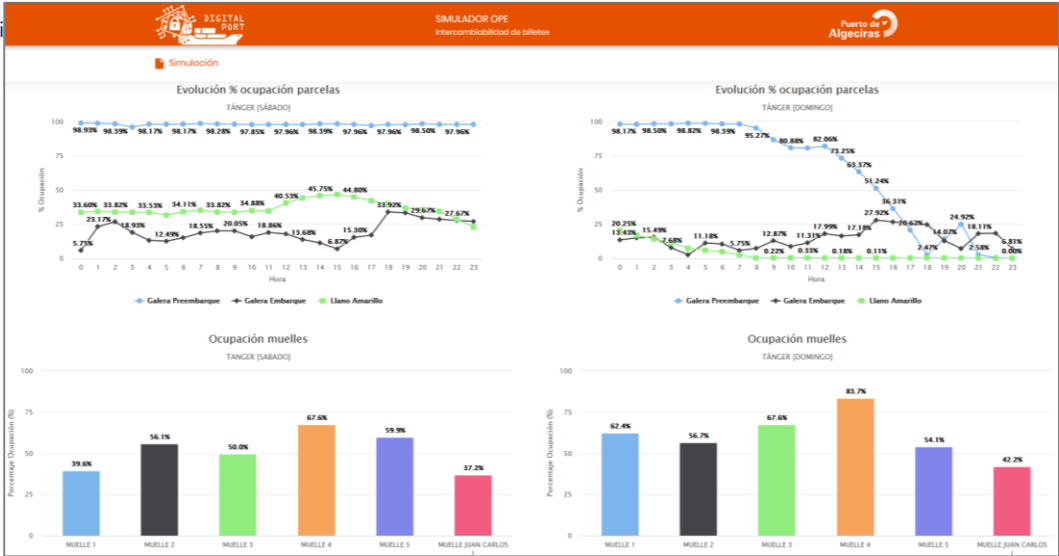
The **simulation tool** should enable APBA to forecast the length of stay and waiting times for passenger vehicle loading and – furthermore – it will allow us to fine tune our ferry rosters and scale our ticket or border checkpoints up or down to increase our ports evacuation capacity. In addition, it should allow us to anticipate decision-making on whether or not to open extra waiting areas or realign road circulation routes inside the Port of Algeciras itself.
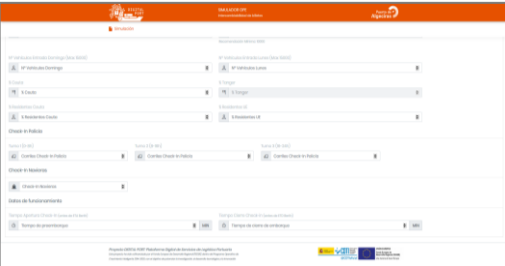
> " If you want to go fast, go alone.
> If you want to go far, go **together.**
>
> *African proverb* "

6

Innovation activities

Alliance with TradeLens: the Blockchain platform driven by IBM and Maersk

At the turn of the year, APBA underwrote a partnership agreement with IBM to take part in TradeLens: an open – and impartial – platform based on a blockchain technology solution that had been the brainchild of **IBM and Maersk**. Its aim is to **enhance transparency and visibility throughout supply chains.**

The co-working platform, launched at the beginning of 2018, should **enable safer and efficient data and documentary exchange that would promote the partnership and trust of its participants throughout the global supply chain**. Ultimately, the aim is to set up the foundations for supply chain digitalisation to add value to each of the different logistics players: from shippers, forwarders, logistics businesses and shipping lines to authorities and public agencies.

TradeLens has already successfully acquired a significant critical mass. **By the end of 2019, this solution had already won over the membership of 175 organisations,** among them maritime and land shippers, Customs authorities, major forwarders, and more than twenty ports (among them, Rotterdam, Montreal, Valencia, Tanger-Med and Bilbao) and terminal operators (PSA Singapore, APM Terminals and Patrick Terminals) worldwide.

Huge companies like Dow Chemical, DuPont and Tetra Pak have also opted to join the platform to harness the multiple benefits the tool offers them, such as process efficiency gains, heightened trust and transparency with their partners.

> **TradeLens** enables a myriad of companies to **work together in a standardised way** that makes up a solid, interconnected network where each member can **guarantee the confidential and secure nature** of their own data when they upload transaction details to the platform. By the turn of 2020, the platform was posting **more than two million events a day.**

Finally, it is worth mentioning that the appearance of supplementary networks, like the Blockchain platform recently announced by the Global Shipping Business Network (GSBN) consortium, can only confirm the belief that the TradeLens initiative is sound and that this type of technology is gaining momentum in the global supply chain.

Membership of the International Port Community Systems Association (IPCSA)

Fuente: www.ipcsa.international

Representing APBA, Ms. Maria Roman and Mr. Paco Saucedo received our IPCSA membership plaque form Hans Rook – the Association's Chairman – at a ceremony that took place on the 12th February last within the World Maritime Week international conference that was being held in Bilbao.

Joining IPCSA was **a key factor in the development of Teleport 2.0 – our new Port Community System (PCS)** – for our organisation. We are going to aim to play an active role in several of the association's task forces: in particular, much interest has been shown in PCSs and e-commerce integration, and in IPCSA initiatives in Blockchain Technology; all to help us **increase our port's competitivity by speeding up end-to-end cargo flows.**

> **At APBA, we believe that PCSs are strategic tools** for any self-respecting port logistics community and that is why we are convinced that Teleport 1.0 needs an upgrade if it is to become a more efficient platform from a logistics point of view. This evolution is to called Teleport 2.0.

The IPCSA was established in 2011 by its six founding members (SOGET, MCP, Portic, Portbase, DBH and Dakosy) and has its headquarters in Europe. It is an association whose mission statement is to **drive e-logistics as a key element for developing maritime and port-logistics sectors worldwide**.

The fact that the world's main PCS operators are associated and work together with internationally-renowned organisations such as IMO, the UN or the WCO enables it to create synergies and promote the Single Window concept for international trade.

PCSs play a key role in data-sharing and simplifying bureaucratic processes by enabling millions of messages to be exchanged every week.

The IPCSA now has a membership of forty ports all over the world, including those of Hamburg, Antwerp, Los Angeles, Trieste, Southampton, Valencia, Tarragona and Israel; and many other PCS operators as well.

Our involvement in the 5G Technology pilot schemes launched by Red.es

Red.es is a public agency under the umbrella of the Department of Digital Progress in the Ministry for Economic Affairs. At the end of 2018, the agency launched a public tender for businesses to **identify, develop and test out 5G technology pilot schemes** to see if future investment by Spanish operators could be justified.

At the turn of 2019, the tender concluded with two projects chosen to be followed through in the Andalusia and Galicia regions, with an allotted budget of just over €35 million. More than €10 million of the budget was to be co-financed by Red.es through the European Regional Development Fund (ERDF), and the Spanish Multi-Regional Operations Programme (POPE) would supervise the two projects.

Virtual Reality (VR) and Augmented Reality (AR) in various fields, five cases experimenting with drone application, and three cases exploring facial recognition.

A 5G network was to be deployed in several locations throughout the provinces of Seville, Malaga, Cadiz, Huelva and Jaen to set up the usage scenarios: the metropolitan area of Seville (historical centre, Cartuja Island, Royal Fairground and FIBES Conference & Exhibition Centre areas) and in the village of Guadalema de Quinteros; around Malaga (the city centre, Andalusia Technology Estate, Maria Zambrano Station, Digital Content Cluster and Car Museum); in Cadiz at the Airbus factory in Puerto Real and at our port in Algeciras; at the Port of Huelva; and at Atlas Aerodrome in Jaen.

APBA would specifically be involved in Vodafone and Huawei's Joint Venture project in Andalusia that would last 30 months and be allotted a budget of over €25 million. The partnership applied for more than €6 million of the funding to be co-financed by Red.es through ERDF aid.

The project envisages thirty-two usage scenarios that would be undertaken in widely-differing areas: agriculture; health; cities and smart ecosystems; security and defence; society; digital economy and culture; digital transformation; and tourism. Among others, there would be ten cases experimenting with

By taking part in the initiative, **our aims** at APBA were to try out the new technology to **compare and contrast both the technological infrastructure capabilities and its capacity to provide a foundation for innovative applications in the field of port security, operations and infrastructure.**

APBA adopts GS1 Standards to make our supply chains more efficient

At APBA, we have partnered up with AECOC-GS1 Spain, the Spanish delegation of the worldwide GS1 corporation that pioneers the main technological development and promotion standards.

In an ever-increasing realm of data volumes, **GS1 Standards enable everyone to share the same language to identify, harvest and share product, asset, service and positioning data throughout the supply chain** in our sector. This is how interoperability among the various data systems and digital platforms can be guaranteed throughout: organizations can be assured that their **essential information is accessible, accurate and easy to understand, and lends end-to-end visibility all along a much more efficient and competitive value chain**.

In particular, we have adopted GS1 Standards towards the following aims:

1. To **identify main locations** within our port, along with the players involved in port-logistics processes, in a **single, universal unambiguous way** by means of standard Global Location Numbers (GLNs). This will enable us to gain fully-automated EDI communications without the need for using more complex, costly tools due to the fact that GLNs identify not only products, but also companies in a uniform way.

2. To **monitor and control port-logistics operations physically and documentarily** as a prelude to improving cargo visibility and tracking by Core Business Vocabulary (CBV) means. These define an Electronic Product

Code Information System (EPCIS) record of events.

3. To **share the actual end-to-end traceability and status of cargoes among supply chain players until they reach the final consumer** in a B2B framework that employs an EPCIS data warehouse as a tool to guarantee interoperability. Standard EPCISs assist in responding to the "What? When? Where? How? and Why?" queries that makes a value chain completely transparent both to consumers and businesses.

GS1 Standards were implemented for the first time during the development of a pilot scheme that took place under the auspices of one of our innovation projects: **Container Value Chain Streamlining at the Port of Algeciras Bay (CVCH), whose aim was to improve the container value chain's visibility and predictability and speed up cargo throughput at our port.** During the pilot scheme, a series of data and events were shared among our CVCH platform and other data systems, like a container terminal's TOS and the Port of Algeciras Bay's PCS.

This all contributed to the Port of Algeciras Bay becoming **the first Spanish port to adopt GS1 Standards,** aligning us with other ports like Rotterdam (in the Netherlands) and Klang (in Malaysia), and supporting international best practice initiatives such as the Port Call Optimisation Task Force.

"

Innovation is part and parcel of APBA's DNA: we are striving to **systemise innovation and create an innovation culture**. Our aim is to make our port benchmark for worldwide innovation clusters to increase our port's competitivity.

"

7

Our innovation awards

Future

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1st Edition of the "Algeciras BrainPort" Award for Best Master's Degree Dissertation

Fuente: EuropaSur

APBA and the Algeciras Technological Campus Foundation (FCTA) presented the first **"Algeciras BrainPort" Awards** for port innovation at a ceremony held at FCTA's RD&I Building in Algeciras in April last, to reward the **best Master's Dissertation** from a selection of works submitted by various universities throughout 2018. Its aim is to promote applied research and innovation in the port-logistics and maritime field carried out in the context of the Port of Algeciras Bay.

The special awards committee that was set up to represent the University of Cadiz (UCA), FCTA and APBA decided that the **winner of the first edition should go to Mr. Ignacio Serra Viedma** from the Polytechnic-University of Valencia's (UPV) Civil Engineering Department for his dissertation entitled **"Study on the Efficiency Improvement of a Container Terminal through Automation: Applied at MSC Terminal at Valencia".**

His work was focused on analysing exactly how automation (or semi-automation) may improve the efficiency of container terminals, and what alternatives or levels of automation – both at a technical and a financial level – would be advisable

for brownfield container terminals that need to increase their storage space or productivity.

During the ceremony, honorary diplomas were also awarded to the three runners-up: **Mr. Ignacio Fernandez de Bobadilla Hildebrandt** – from the Polytechnic of Algeciras (UCA) – for his work on the "Study of Wave Propagation and Vertical Sea Wall Calculus: A Review of the Port of Algeciras Detached Breakwater"; to **Ms. Blanca Jimenez Navas** – from UCA's Master's Degree in Port-Logistics Management – for her work on the "Estimation of the Ceuta & Tanger-Med Line Ferry Fleet Numbers"; and to **Mr. Alejo Parejo Cote** – also from UCA's Master's Degree in Port-Logistics Management – for his dissertation on "Electronic Data Interchange: the Relationship between Container Terminals and their Clients - a Public Container Terminal at Algeciras".

The main prize – **an award of €1,200 and a six-month salaried internship at APBA** – was presented by Ms. Rosa Rodriguez Cano, FCTA's Manager, and Mr. Eduardo Villalba, APBA's Board Secretary.

2nd Edition of "The Journey of Innovation" Competition for the Best Innovation Ideas

APBA launched our **second Innovation Competition – the so-called "The Journey of Innovation"** to look for new solutions to four specific challenges, oriented towards all the companies, universities, tech centres, students, entrepreneurs and start-ups – as well as our own employees – who wanted to join the initiative.

Our **aims** were: to promote innovation at the Port of Algeciras Bay; reinforce our highly-valuable innovative ecosystem; improve our competitiveness; and create added value for our users and customers.

Candidates were asked to submit their ideas via our Innovation Portal before 19th December last. Candidates' ideas should have a relationship with one of the following four **innovation challenges** (below) proposed by our organisation:

1. To improve passenger and haulier comfort at the ports of Algeciras and Tarifa.

2. To create new data-analysis based business models using IoT-linked devices and shared platforms to achieve operational excellence

3. To achieve the Port of Algeciras Bay's gradual decarbonation and a reduction in our port-city interface's environmental impact.

4. The implementation of new measures to transform the day-to-day work of our APBA employees.

A jury constituted for this purpose and made up of members of our Innovation Committee and the Innovation Office will analyse the ideas sent in according to their **appeal, feasibility, impact and popularity** and awards will be divided into **two categories:**

- **Best In-House Initiative**: awarded to the best innovation idea put forward by an APBA employee and rewarded with a prize of an electric bicycle, and following through with the candidate's innovation idea.

- **Best External Initiative**: awarded to the best innovation idea put forward by a non-APBA employee and rewarded with a prize of an electric bicycle, and the chance of a €15,000 subsidy to develop a prototype or minimally feasible product.

In addition, the **idea deemed most popular** on our open innovation portal would be given an honourable mention.

4 challenges

1. Seamless Journey
2. Data has a better idea
3. Towards a zero carbon emissions
4. Workplace 2.0

More than 35 ideas received and 20 different proponents

2nd Edition of the "Algeciras BrainPort" Award for Best Bachelor's and Master's Degree Dissertations

APBA and FCTA launched the **second "Algeciras BrainPort" Awards ceremony** in October last to continue to acknowledge the talent and contribution of innovative initiatives of our university students and researchers who ponder all the aspects of the port-logistics business.
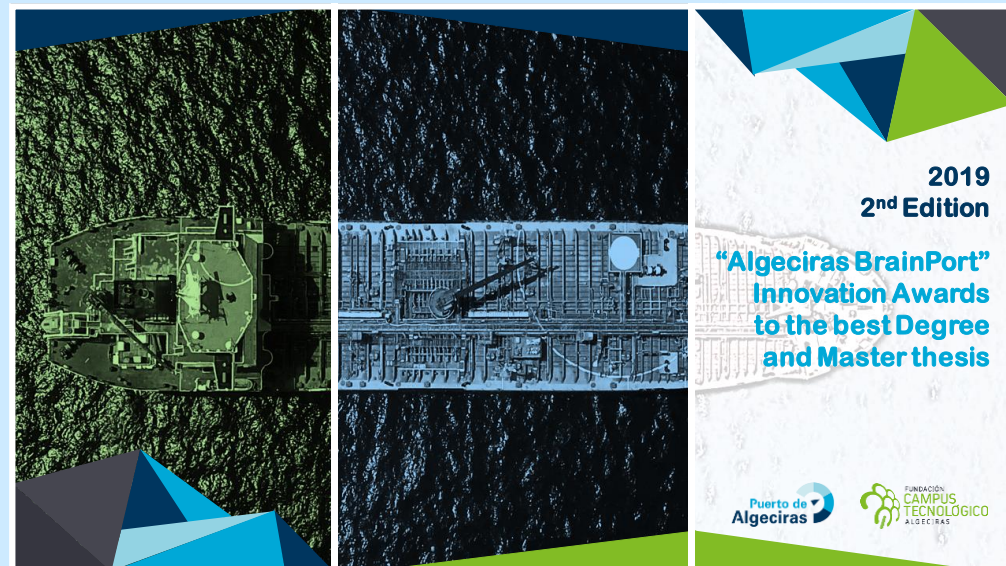
Our own "innovation" for the awards ceremony was to award two prizes: one for **the Best Master's Dissertation** that had the greatest impact on the port-logistics business at Algeciras, with a €1,200 prize and a six-month salaried internship at APBA; and another for the **Best Bachelor's Degree Dissertation** that carried with it a full grant to study one of the Master's Degrees on offer at the University of Cadiz (Port-Logistics Management, Civil Engineering or Renewable & Efficient Energy Systems).

All the dissertations submitted had to be related with the port-logistics and maritime business that takes place at the Port of Algeciras Bay and be aligned with one of the **following focal points (F) and/or innovation challenges (C):**

- F1: Port operations & logistics integration.

- F2: Environmental sustainability and energy efficiency.

- F3: Port resilience, safety and security.

- C1: Improvements to passenger and haulier comfort at the Port of Algeciras Bay.

- C2: New data-analysis based business models – the use of IoT-linked devices and shared platforms to achieve operational excellence.

- C3: The Port of Algeciras Bay's gradual decarbonation and a reduction in our port-city interface's environmental impact.

All the projects would be analysed by a specially set up committee made up of several renowned representatives from APBA's and FCTA's port-logistics innovation areas, and they would choose a single prize-winner for each of the categories. The winners are to be announced in 2021, when the awards ceremony will be held. The rules to participate and submit dissertations are all detailed in the competition regulations (on our innovacion.apba.es website) and the deadline for candidates to hand in their work is on the 1st November 2020.

2019
2nd Edition

"Algeciras BrainPort"
Innovation Awards
to the best Degree
and Master thesis

Puerto de Algeciras
FUNDACIÓN CAMPUS TECNOLOGICO ALGECIRAS

Focus

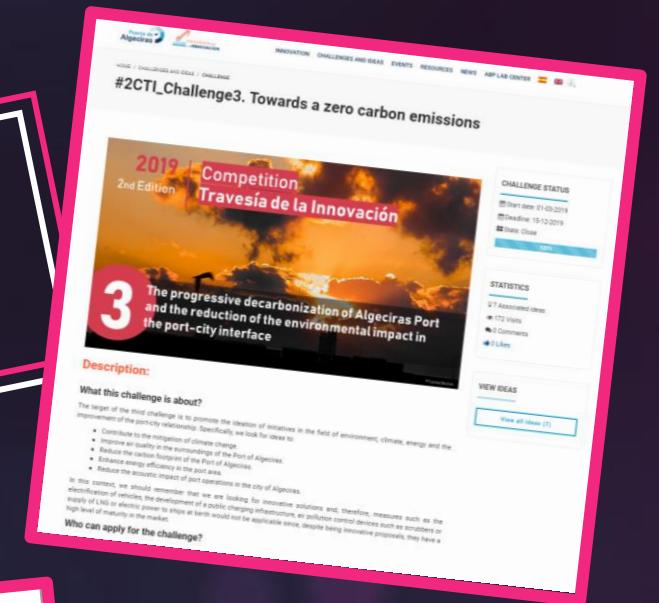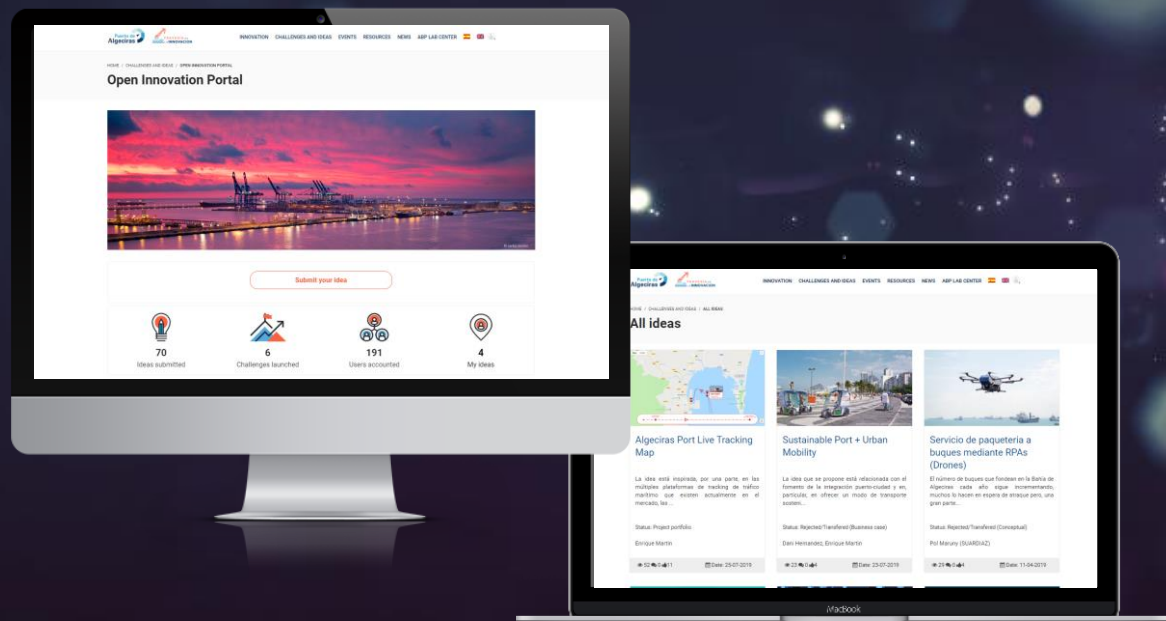**Port-logistics operations**

Sustainability and energy efficiency

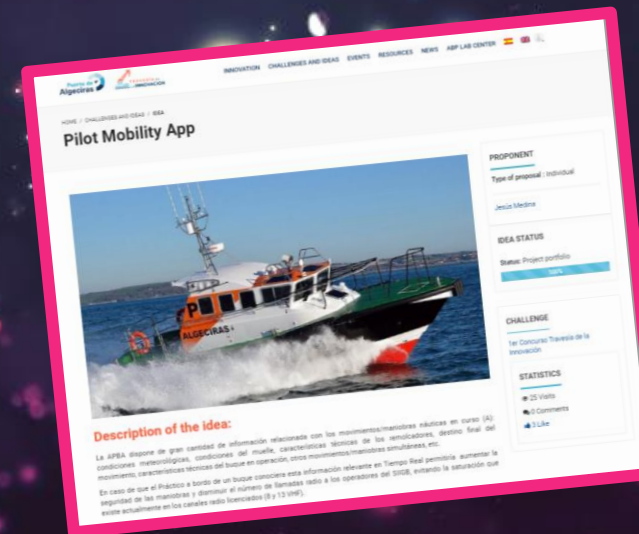**Resilience and port safety and security**

GET TO KNOW OUR
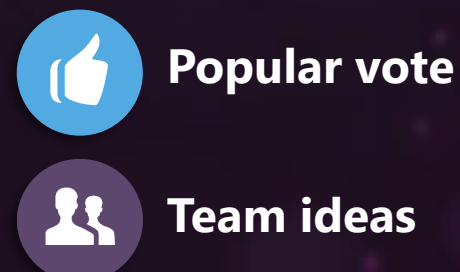# ON-LINE CHALLENGES & IDEAS PORTAL

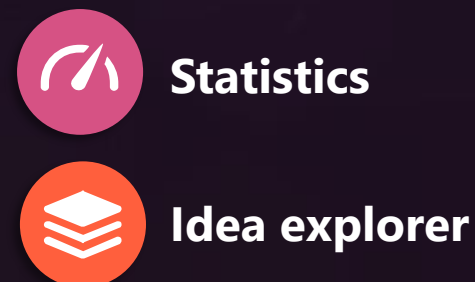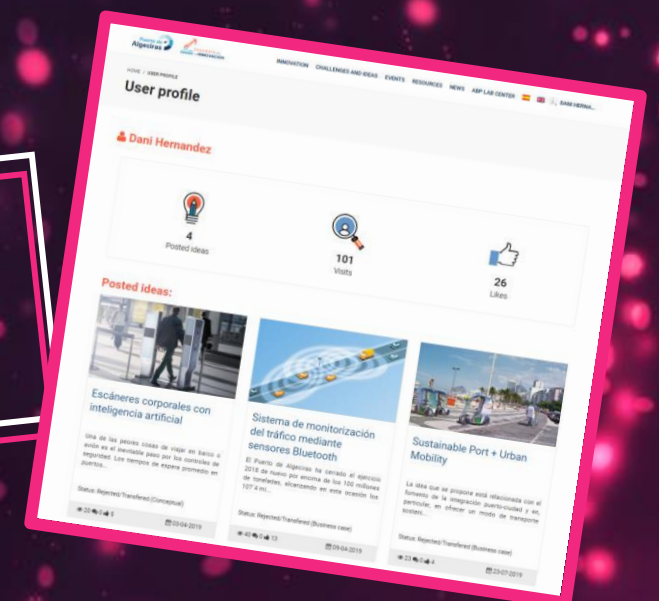**Explore open challenges and send in your proposals**

Comment on submitted ideas and vote for your favourite

Access your profile and consult the status of your ideas

Statistics

Popular vote

Idea explorer

Team ideas

https://innovacion.apba.es/en/challenges-and-ideas/open-innovation-portal/

Spain

Holland

Germany

China

Singapore

8

Main conferences and events

III SmartPorts Workshop: Plunge into Ports
4.0 [Executive Forum & Eurogestión, Madrid]

Fuente: @EurogestionCat

Represented by our CIO, Mr. Francisco de los Santos, our port took an active lead at the **III Edition of the Smart Ports Workshop: Plunge into Ports 4.0**.

The workshop was held at Sngular's headquarters in Madrid and brought together a host of delegates who represented Ports and Port Authorities, and the tech companies involved in developing innovation projects for the port-logistics sector.

Following the opening ceremony and workshop presentation by Mr. Juan Manuel Martinez – Manager of Eurogestion – the lectern was handed over to Mr. Jose Llorca – Director General of the State Ports' Innovation Department. He presented the plan for entrepreneurship to drive innovation in the port sector, which his public agency was to put into action imminently.

The morning continued with a block of presentations that let the audience know about real cases and successful innovation projects. Our **APBA delegation also had the opportunity to put forward the strategic pillars that would transform the Port of Algeciras Bay into a new-generation smart port that would be mainly based on the implementation of a digital platform to**

orchestrate our operations and consolidate innovation as a business process.

Finally, our APBA representatives took part in a round table meeting together with delegates from other Port Authorities and pioneering tech companies involved in our sector, such as **T-Systems, Portel, Thales, Wonderware and Sngular.**

Algeciras Port Open Innovation Day 2019
[Port of Algeciras Bay Authority]

The Port of Algeciras Bay Authority – together with the Innovation Office (IDOM) – hosted our first **Open Innovation Day** in the Millan Picazo Auditorium during last May. The conference was focused on Innovation, Entrepreneurship and Ports 4.0 and welcomed more than 120 guests in our aim to use this as a meeting point for our Port Community and all the other players in the innovation ecosystem (businesses, entrepreneurs, start-ups, spin-offs and other individuals).

The conference began with a welcome speech made by **our Chairman – Mr. Gerardo Landaluce – who highlighted the importance of innovation for our port, stating that it was a key initiative to creating wealth of a high added-value nature that would enable our port to stay competitive in the long term**.

Following our Chairman, Mr. Francisco De los Santos (APBA's CIO), Mr. Jesus Medina (APBA's Innovation Manager) and Mr. Francisco Jose Fernandez (partner of the Cremades & Calvo Sotelo company) made a joint presentation to inform the audience about the **Port of Algeciras Bay's innovation strategy and digital transformation** that included details about the main challenges we face and the various co-working options on offer.

After the brief coffee break, which our audience made use of to network with our guests, **Mr. Jose Llorca (Managing Director of the State Ports' Innovation Department) and Mr. Joaquin Martinez (Head of the Technical Office that would support our programme) presented the "Ports 4.0 Fund" Entrepreneurial Drive Plan** together. This is a governmental scheme that all the Spanish Port Authorities are involved in and is supervised by the State Ports Department. It has a €20-to-25-million budget and aims to encourage entrepreneurs to take part in open innovation and streamline the development of ideas and projects in the port-logistics sector.

One of the most-awaited moments of our conference was **the last set of presentations: six start-ups (Alen Space, Bound4blue, Carto, Mitmynid, Vestigia and Witrac)** involved in the 4.0 logistics and transport sector economic pillars were finally able to announce their novel proposals and solutions for the port-logistics sector and , in particular, for our port.

The conference concluded with a networking cocktail break for all our guests.

Huawei Enterprise Day 2019
[Wanda Metropolitano Stadium, Madrid]

The Metropolitan Wanda Stadium – home to Atletico de Madrid – set the stage for the latest edition of Huawei's Enterprise Day, one of the reddest tech calendar events of the year and focused on the corporate world.

Along strategic lines that are based on driving its customers' digital transformation, Huawei hosted several exhibitions and speeches by top TIC-sector specialists, and **presented a myriad of successful cases, among which the Spanish Public Authorities stood out for their initiatives like the one at the Port of Algeciras Bay.**

It was in this scenario that Mr. Francisco De los Santos – APBA's CIO – and Mr. Manuel Sanchez de Alcazar – APBA's Port Security Manager – were tasked with presenting our Port Authority's ideas about Digital Transformation for Next Generation Ports and how **data analysis and its employment in decision-making plays a key role**.

They also offered conference-goers a live demonstration of our new Advanced Radio Comms System – **the first private broadband LTE network ever implemented by a European port.**

The network's aim is to provide back-up to APBA and our Port Community's operational, security and control coordination activities, as well as to be **ready for massive and critical-mission IoT.**

Finally, Mr. Tony Jin Yong – Huawei Spain's CEO – took stock of the latest of his company's innovations and presented the Asian powerhouse's new tech solutions.

Maritime Silk Road Port International Cooperation Forum [Ningbo, China]

At the end of July last, the **V Maritime Silk Road Port International Cooperation Forum** was held in the city of Ningbo (Zhejiang Province, China). In 2019, this forum coincided with the Chinese Maritime Forum, both being organised by the Zhejiang Seaport Group – together with other business organisations and leading ports such as Algeciras Bay, Rotterdam and Antwerp – and **focused on building a platform to drive communication and cooperation in the port-logistics ecosystem** to achieve common goals: equality, co-working and mutual profit.

The last day of the forum saw the Connectivity Section presented, moderated by Mr. Akihiko Takahashi – Manager of the Japanese company, Suzuyo – that focused on digitalisation, automation and the port-logistics sector's role in e-commerce development.

The final day's session was shared among presentations made by ports like Antwerp, Valencia and local Chinese companies like Shanghai Zhenhua Heavy Industries. It was during this session that the Port of Algeciras Bay's representative, **Mr. Francisco De los Santos – APBA's CIO – had the chance to present our port's digital strategy and our main innovation projects and initiatives with such ground-breaking start-ups and tech companies** as Amazon, Huawei, Vodafone and Telefonica.

Our port's delegation took advantage of the Asian Tour to visit the **Port of Singapore's Maritime Innovation Lab (MIL)** and continue to pursue co-working agreements that would enable both ports to link up their innovation ecosystems.

The MIL is one of the Port of Singapore Maritime & Port Authority's (MPA) initiatives to implement their port's concept of a **Living Lab** and build both a physical and digital platform that could help create innovative solutions. **This is something that we at APBA have been working on for some time now and should enable us to build an environment that helps foster innovation product and service experimentation and testing and, therefore, the eventual development of new solutions for our Port Community and the innovation ecosystem itself.**

JOC Container Trade Europe Conference 2019 [Hamburg, Germany]

Our Port Authority sent a delegation to Hamburg (Germany), headed by Mr. Francisco De los Santos – APBA's CIO – all of who took an active role in the fifth edition of this conference in September.

The event brought together more than 400 conference-goers and was organised into several expert logistics, trade and technology panels that analysed the main trends and challenges that the maritime transport sector was facing.

APBA specifically took part as one of the port productivity workshop speakers: a forum that was centred on identifying improvements to operational productivity and involving all of the container business players. At the workshop, the attendees had the chance to review and debate the sector's latest trends, as released by the data from IHS Markit's research into the matter, and were able to interface with operators, ports, terminals, and tech

suppliers – among others – in an interactive environment that had been designed to expose the players' best practice and co-working opportunities that could improve their business performance.

CONTAINER TRADE EUROPE

16 – 18 September 2019
Hamburg, Germany

Smart Ports Summit 2019 (Smart City Expo World Congress) [Barcelona, Spain]

Our port took part at the 2019 edition of the Smart Ports Summit conference in Barcelona between the 19th and 21st November last. The event coincided with the Smart City Expo World Congress and aimed to disclose **how ports could bring in new business, adjust to fresh global demands and even see a jump in sales by introducing new digitalised systems**.

Conference participants analysed the way to automate port processes, standardise data streams and help improve transparency levels to streamline the supply chain. Against this thematic backdrop, by **Mr. Francisco De los Santos – APBA's CIO – presented APBA's digital innovation road-map, along with our array of up-and-running initiatives and projects that we expect will make the Port of Algeciras Bay a Next Generation Port, seamless, autonomous and intelligent.**

Various speakers presented projects along a similar line: innovation projects focusing on several areas such as the environment, social and financial sustainability, and others relating to automation and smart data systems; all aspects that can enable Port Authorities to strengthen their market positions looking forwards.

Finally, a spotlight was shone on **new enterprising strategies and business models, smart ops and the use of Big Data** in presentations concerning case studies based on Blockchain and cyber-attacks.

Smart Ports Summit Barcelona

19-20 Nov 2019

INTELLIGENT DATA
TRANSPARENCY
SUSTAINABILITY
BIG DATA
AUTOMATION

Port de Barcelona

Smart Digital Ports of the Future Conference (#SDP19) [Rotterdam, Holland]

Our Port Authority had the chance to take part in a round-table discussion about the **"Real Value of Smart Data"** at the Smart Digital Ports of the Future (SDP19) Conference, hosted by Port Technology in Rotterdam.

The session brought together the Maritime & Port Authority of Singapore, Navis, Miros-Group, the Port of Algeciras Bay Authority and was moderated by Leticia Astudillo of Drewry Associates. One of the big issues up for debate was how data should be used to take decisions, implement digitalization learning, and incorporate innovation into business operations.

The two-day event dealt with consistent subjects throughout possibly the most important being **the need for greater visibility and cooperation, especially with data, and a drive towards standardization**. Fascinating insights on artificial intelligence, the end-to-end supply chain and emerging transportation technologies also came to light.

Against this backdrop, we must underline the fact that **stakeholders are not choosing to design their own in-house data standards but are preferring to make an alliance with those that already have them in place, as the swiftest way to ensure global efficiency and cooperation.**

A good debate about blockchains also cropped up. Blockchain technology is currently being backed as a solution to validate transactions and relay data, and the discussions on this subject lined up very neatly alongside these standards, concluding that **the maritime industry will only achieve true efficiency and transparency once there is consensus about how data-share is to be carried out.**

Finally, we would like to add a couple of conclusions that stand out:

1. The future of PCS is blossoming as trusted third parties for B2B, B2G and G2G data-sharing and business process automation; and

2. The business environment for shippers and cargo owners - whose expectations are pressing for ports to be more proactive – is changing.

IV International Conference on Sustainable Development [FCTA, Algeciras]

Between the 21st-22nd November 2019, APBA took part in the IV International Conference on Sustainable Development jointly **organised by the Technological Campus Foundation of Algeciras (FCTA) and the University of Cadiz (UCA)**, aided by the assistance of the Friends of Science Association and British Geological Society.

The symposium was held in the FCTA's RD&i Building, which provided the venue for a wealth of researchers, experts, students – and the general public at large – to reflect and analyse a way forward to the aims of the 2030 Agenda; to try and **build a more sustainable Campo de Gibraltar Area; and to promote circular economies through holistic thinking, innovation and internationalisation.**

Each year, five of the Seventeen Sustainable Development Goals (SDGs) are analysed. During the IV Edition, the following were debated: **Affordable and Clean Energy (7), Decent Work and Economic Growth (8), Industry, Innovation and Infrastructure (9), Life Below Water (14) and Partnerships for Goals (17).**

The event was structured into several sessions with project presentations and talks on results and applications – all from different points of view – that were followed by debates that were open to the audience, with setting up networks for future activities and harvesting fresh proposals in mind.

Following the opening "An Economy for the 20th Century: Living Well, within the Limits of our Planet" speech given by the Canadian ecological economist, Mr. Andrew L. Fanning, from the University of Leeds's Sustainability Research Institute (United Kingdom), it was the turn of **Mr. Enrique Martin, APBA's Innovation Office Manager. He presented the projects and initiatives that are currently under way at our port to improve efficiency and environmental sustainability by means of digital transformation and data-sharing among the different supply chain players.**

"

With millions of passengers every year, Port of Algeciras is one of the busiest ports in the world. With what3words it is also now one of the easiest to find your way around. **We are very happy to be working with such an innovative company.**

"

Giles Rhys
CMO de what3words

9
Collaboration
with start-ups

Kaleido is a company that is walking hand-in-hand with APBA's open innovation programme

APBA trusted part of its **open innovation** strategy implementation to **Kaleido Tech**; specifically, the search for solutions to a series of innovation challenges through working together with the **entrepreneurial ecosystem and start-ups**.

Kaleido is a global logistics operator that has always been at the forefront of innovation and – over the last few years – has developed a ground-breaking business model in its creation of an accelerator focused on **finding solutions for the logistics industry thanks to cooperation with specialist start-ups**.

This is how Kaleido came to have its own R&D department that has evolved since 2008 to such an extent that it has spun off into **Kaleido Tech**, a business unit made up of technically-minded people who manage projects with a strong innovative inclination, created specifically for the purpose of identifying technology, bringing on talent and ideas, and providing their customers with top-range streamlined, efficient solutions. Since 2015, it has also been a member of accelerator programmes – with more than 2,000 contact start-ups and 30 more accelerated start-ups – giving it a huge experience that has enabled the company to **identify the best technologies in the world and apply them to the real market with great success and to the benefit of each of its customers**.

In 2019, its **Logistics Tech Accelerator** programme went into its 5th version and accumulated successful pilot schemes and co-working among businesses in the USA, Canada, the UK and Germany, among other countries.

During **the first scouting venture carried out at APBA**, the partnership was based on covering the following specific needs:

- **Support whilst identifying, analysing and prioritising specific business challenges**.

- An **active search for solutions, tech partners and talent** on an international scale, and in all the sectors having a potential interest in meeting their needs through challenges.

- An **escort at the initial meetings with chosen start-ups** to assess pilot scheme and follow through possibilities.

It is through this programme that APBA has gained a greater knowledge of the entrepreneurial and start-up innovation ecosystem that prevails in the port-logistics sector today. Our end goal was to **access innovation technologies and new business models that would enable us to find solutions to the challenges** and obstacles that we face at the Port of Algeciras Bay at present. The new initiative – along with other additional and synergetic activities that were encouraged within the framework of our innovation strategy – was to attract entrepreneurial talent and increase our port's innovative capabilities by **promoting a benchmark port-logistics innovation ecosystem for the world.**

APBA led a pilot scheme with Bizcargo.com and Port Community companies

Together with the **Mitmynid** start-up – the founder of the Bizcargo.com platform – and several Port Community members, APBA began a pilot scheme to **enable Port of Algeciras Bay service providers to upload their services on the platform, thereby streamlining logistics planning and transportation to and from end customers (shippers) through our port.**

Mitmynid is a Portuguese start-up that develops software tools that focus on simplifying processes and enhancing performance in different areas such as logistics, health and the environment.

Last May, the company took part in our **Open Innovation Day** and presented one of its main solutions: **Bizcargo.com – a market place platform where you can search and compare the best transport and logistics services with simple door-to-door or multimodal solutions.**

Bizcargo users can ask for pricing, manage their bookings, and track their goods. The platform takes on the search and combination of the logistics services supplied by its providers (by road, rail, sea and air) by its own smart-routing system, and gives the user a streamlined solution, improves logistics efficiency, transit times and cost.

It is with this in mind that the first phase pilot scheme began, with various companies participating in November last year. The participants would upload their services onto the platform to **offer users the chance to request their now on-line services, increase their market presence and thereby promote an increase in the Port of Algeciras Bay's throughput volume.**

"Our main aims are to make the day-to-day life of our customers easier, to help reduce any inefficiency in the logistics chain, reduce your carbon footprint and generally to improve your quality of life by reducing the numbers of HGVs on the roads.

That's why we want to **streamline logistics service search and hiring processes as much as possible**".

Rui Barros
Co-Founder & CEO Bizcargo

APBA ramps up its partnership with the London "what3words" start-up

APBA increased its level of cooperation with the **what3words** company, a start-up that was founded in 2013 and has developed a new global address system, having identified the fact that the worldwide address system had not been good enough to cover every day needs.

The start-up's aim is to become a global standard to point out locations and has **drawn up a 3-by-3-metre-square grid of the world, with each square having a 3-word unique address**, meaning that each location – wherever it is in the world – can be accurately determined in only three words: e.g., ///orquesta.subir.reno denotes the 3-by-3 metre space occupied by our Passenger Terminal entrance, and ///embajada.traga.vieran indicates the 3-by-3 metre space leading to our Heavy Traffic Terminal (HTT), both at the Port of Algeciras. **Three-word addresses are easier to remember that a postal address and can be shared more accurately than any other reference system.**

At the moment, the system is available in more than 30 languages, enabling more than half the world to use it in at least one of its official languages. What3words is also the first company to set in motion pioneering global positioning technology designed with voice input in mind, and is aiding drivers all over the world in using GPS systems that are user-friendly, accurate and virtually error-free.

In fact, **their work together with Mercedes-Benz and Ford has allowed millions of drivers to get to their destinations by the simple utterance of three words into their on-board digital systems.**

One product of our partnership with the company is that **APBA has supplemented and actually improved our port's access information for passengers and hauliers alike – along with the rest of port users and customers** – via our website and road signage at the main points of interest.

This is how we all of our points of interest and companies in Algeciras and Tarifa have been pinpointed: they already have their what3words addresses, which has **improved both the signalling of routes to and from both ports and the mobility of all the passenger and heavy goods traffic that comes into our port facilities every day.**

Thanks to its simplicity and accuracy, this technological advance will curb the usual frustrations that go hand in hand with sat-nav devices - ranging from it being impossible for us to enter the right destination to giving us directions to the wrong destination. With what3words, entering the name of a street – that may exist in that exact name in a myriad of locations, spelling a post code wrongly or pronouncing an address badly is becoming a thing of the past.

///gasta.letras.sedas
Algeciras, España

START-UP Radar 2019

Image&Video Processing

cogniac · DEEP EYES · ANYLINE · allread · wooptix · BALiDEA

IoT/5G/NextGen Comms

urban clouds · bound4blue

Logistics & Mobility

BIZCARGO · iomob · awake.ai · PortXchange

Advanced Analytics, IA&ML

ELEMENT AI · CONTIAMO · GIGASPACES innovate with confidence · FILAMENT · LUCA AI Powered Decisions · SIMPLUS make smarter decisions · BLUE CARGO

Energy Efficiency & Sustainability

sigfox · WiTraC · ALén space

Location Intelligence & Geo-Mapping

MarineTraffic · CARTO · WHAT3WORDS

Future Transportation

ZELEROS · navlandis · CONNECTAINER

Blockchain

VESTIGIA · chainGO

Drones

RIGITECH · Hydrographica

Maritime Instrumentation

L. STRAATMAN BV

10
Press release

EL ESTRECHO DIGITAL

La APBA, pionera en lograr la certificación 166002 para su Sistema de Gestión de la I+D

Significa que cumple con los requisitos de la citada Norma UNE para las actividades de investigación, desarrollo e innovación en el ámbito de la logística y las operaciones portuarias.

ALGECIRAS BAY PORT SUSTAINS OVER 200 DIRECT CONNECTIONS IN THE FIVE CONTINENTS

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Viva Campo de Gibraltar

CAMPO DE GIBRALTAR

El Puerto de Algeciras, escenario de un proyecto piloto de red 5G

La dársena algecireña es uno de los 32 puntos donde se desarrollará esta experiencia

PORT

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Major European Port Joins Global Association

By Max Schwerdtfeger • 21 February 2019, 15:25 GMT • Automation and Optimization, Environment and Sustainability, Global Trade, Ports and Terminals, Shipping Lines, Smart Technologies, Supply Chain

The Port of Algeciras has officially joined the International Port Community Systems Association (IPSCA) as it looks to drive digital collaboration and improve trade logistics, according to a statement.

The Algeciras Port Bay Authority (APBA) has said joining the association will accelerate its drive towards digital visibility and operational management.

#CHALLENGE YOUR TOS
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INFORM

Gartner Research

The Culture Hacking

Published: 23 October 2019
ID: G00383568
Analyst(s): Erik Van Ommeren, Mary Mesaglio

Summary

Culture hacking takes change off the horizon... life in a visceral, immediate, low-effort way. CIOs can follow this six-step process to kick off or reignite change and embed culture hacking in an overall culture change effort.

port.today

Algeciras joins TradeLens platform of IBM and Maersk

Posted on January 23, 2019 | By Julia Louppova | No comments

The Port Authority of Algeciras (La Autoridad Portuaria de la Bahia de Algeciras, APBA) has signed a co-operation agreement with IBM to participate in the TradeLens platform, a blockchain-enabled shipping solution, that was jointly developed by IBM and Maersk in order to improve transparency and visibility along the supply chain. The port's press service informs that this initiative forms part of the innovation strategy of Algeciras.

naucher GLOBAL
INFORMACIÓN MARÍTIMA FIABLE Y PROFESIONAL

INICIO   ACTUALIDAD   CULTURA

ECONOMÍA MARÍTIMA • PUERTOS

El puerto de algeciras participa en el v foro de cooperación portuaria de la ruta de la seda

por Redacción Naucher • 15 julio, 2019

Digital Innovation Strategy at Algeciras BrainPort

EL ESTRECHO DIGITAL

El Puerto de Algeciras acoge el Open Innovation Day

Se trata de dar a conocer la estrategia y los retos de la institución

09 MAYO 2019
ALGECIRAS PORT OPEN INNOVATION DAY
Increasing our competitiveness through Start-Ups

EuropaSur   **ALGECIRAS**

CAMPO DE GIBRALTAR   PROVINCIA   ANDALUCÍA   ESPAÑA   ECONOMÍA   DEPORTES   CULTURA   OPINIÓN   TODAS LAS SECCIONES

ALGECIRAS   LA LÍNEA   SAN ROQUE   LOS BARRIOS   TARIFA   JIMENA   CASTELLAR   TESORILLO   GIBRALTAR

CONTENIDO PATROCINADO

Convocada la II edición de los Premios de Innovación "Algeciras BrainPort"

• La iniciativa del Puerto de Algeciras y la Fundación Campus tecnológico tiene por objetivo reconocer el talento y la contribución al desarrollo de iniciativas innovadoras

SUPLEMENTO FITUR 2020

2019
2ª Edición
Premio de Innovación Portuaria "Algeciras BrainPort" a los Mejores Trabajos de Fin de Grado y Máster (TFG/TFM)

Algeciras, una experiencia multidisciplinar

EL ESTRECHO DIGITAL

Los puertos de Algeciras y Tánger Med firman un Memorando de Colaboración Avanzada

Acto presidido por los reyes Felipe VI y Mohamed VI y que se ha celebrado esta

ABCdesevilla   ECONOMÍA

Sevilla ▾   Provincia ▾   Opinión   Andalucía ▾   España   Internacional   Economía   Deportes ▾   Cultura ▾   Gurmé ▾   90 Aniversario ABC   Gente&Est

ECONOMÍA

El Puerto de Algeciras quiere crecer mediante la colaboración público privada

● Pretende potenciar la innovación de las empresas logísticas y fomentar su incorporación a sus instalaciones

"Difficult paths often lead to beautiful destinations"

Algeciras Port

TRAVESÍA DE LA INNOVACIÓN

innovacion.apba.es/en/