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Shifting Trends in Innovation:
Integrating Technologies for Comprehensive,
End-to-End Security Solutions

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WCO Technology Conference & Exhibition
Rio de Janeiro • 12-14 November 2024

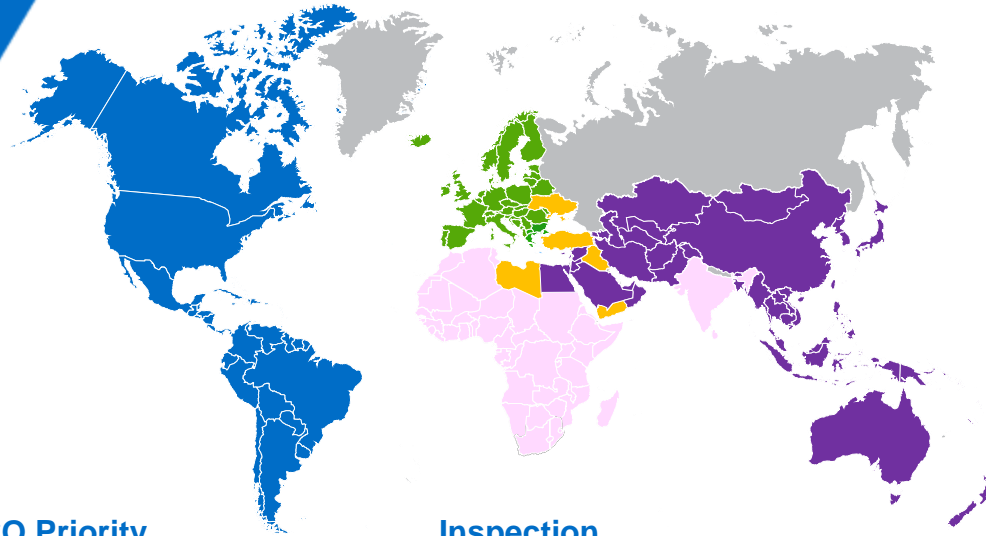
*Harnessing the Transformative Potential of Detection Technology:
How Non-Intrusive Inspection Systems are Reshaping Customs Operations*



SECURITY SOLUTIONS FOR A SAFER WORLD

Varied Trends in Global Detection Requirements

- There is a wide range of image performance requirements, standards and threat detection needs around the globe
- Some performance requirements can translate to complex solutions, BUT...
- Early discussions focused on **detection and operational requirements** rather than specifications can often result in more effective, less costly solutions
- But which solutions to choose?



| Primary Targets | WCO Priority Level (/6) | Operations | Inspection Tech. | AI | WCO Theme | Occupied Scanning |
|---|-------------------------|-----------------------|-----------------------|--------------|---|-------------------|
| Drugs (Fentanyl) - Weapons | 5.06 / 4.74 | Primary and Secondary | TX BX | Yes | Security & Drugs | |
| Tobacco and alcohol | 4.94 | Secondary | TX → BX | Yes, limited | Revenue | |
| Currency, gold, gems and other precious metals | 4.7 | Secondary | TX → BX | Yes, limited | Anti-Money Laundering & Counter Terrorism Financing | |
| Monuments, museums, art collections, libraries and archives | 3.41 | Secondary | TX BX | Yes, limited | Cultural Heritage | |
| Mixture of commodities and threat items | 0-6 | Primary and Secondary | TX | Mixture | Mixture | |

No Single Perfect Solution— And It's Not Surprising!

Let's look at the medical industry from which
we leverage many of our NII technology
developments:

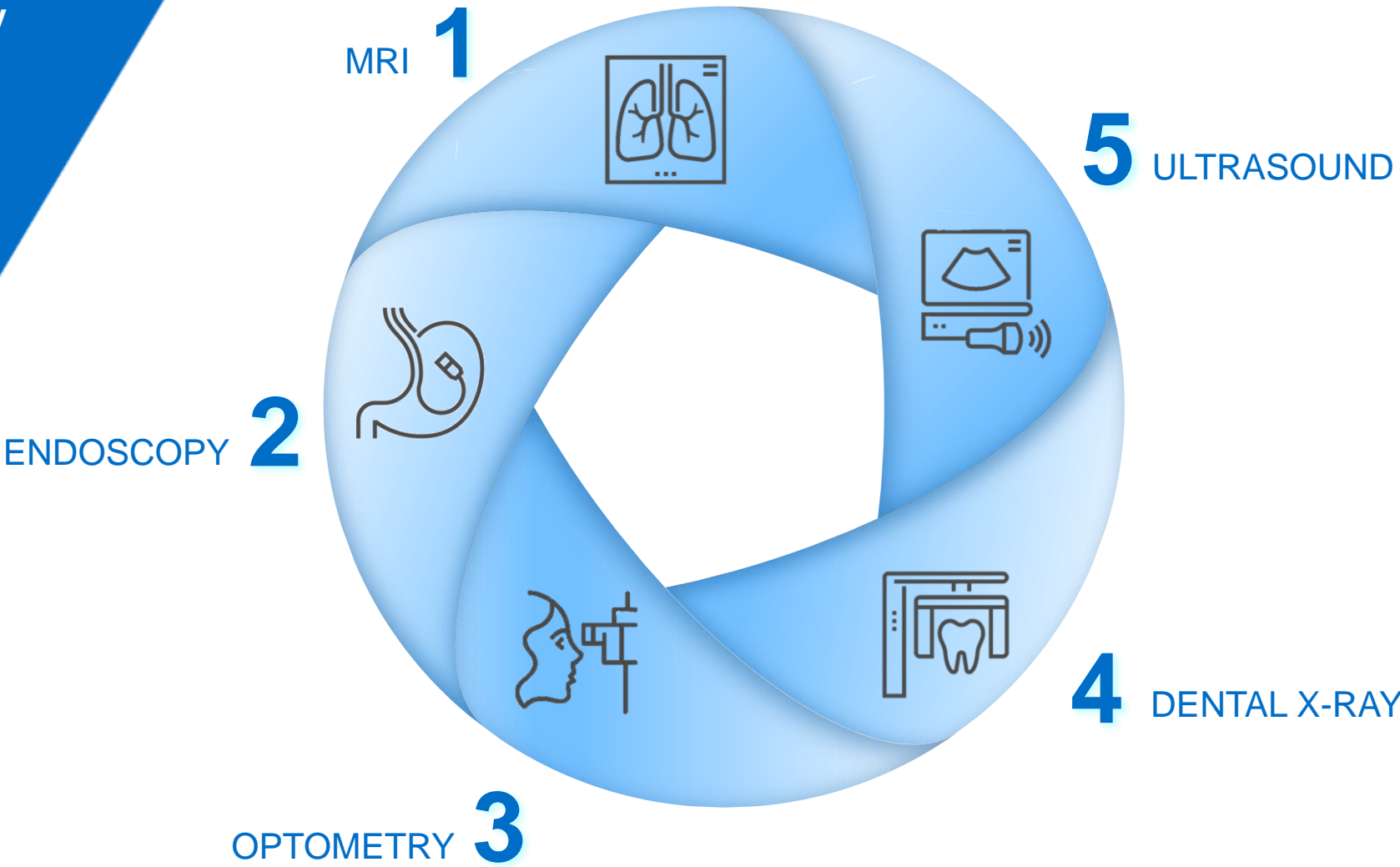
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- **Detection technologies** are targeted to specific ailments, infections and diseases.
- Some are non-intrusive, non-ionizing, and quick, others more invasive and require more time to undertake

We can and do benefit from the technological advancements in medicine...But we must acknowledge the differences.



But It's Even Harder in Security

- We don't have the early warning sensory receptor network to **guide solutions**
- No opportunity exists to make one measurement now, and a follow up measurement in 2 weeks

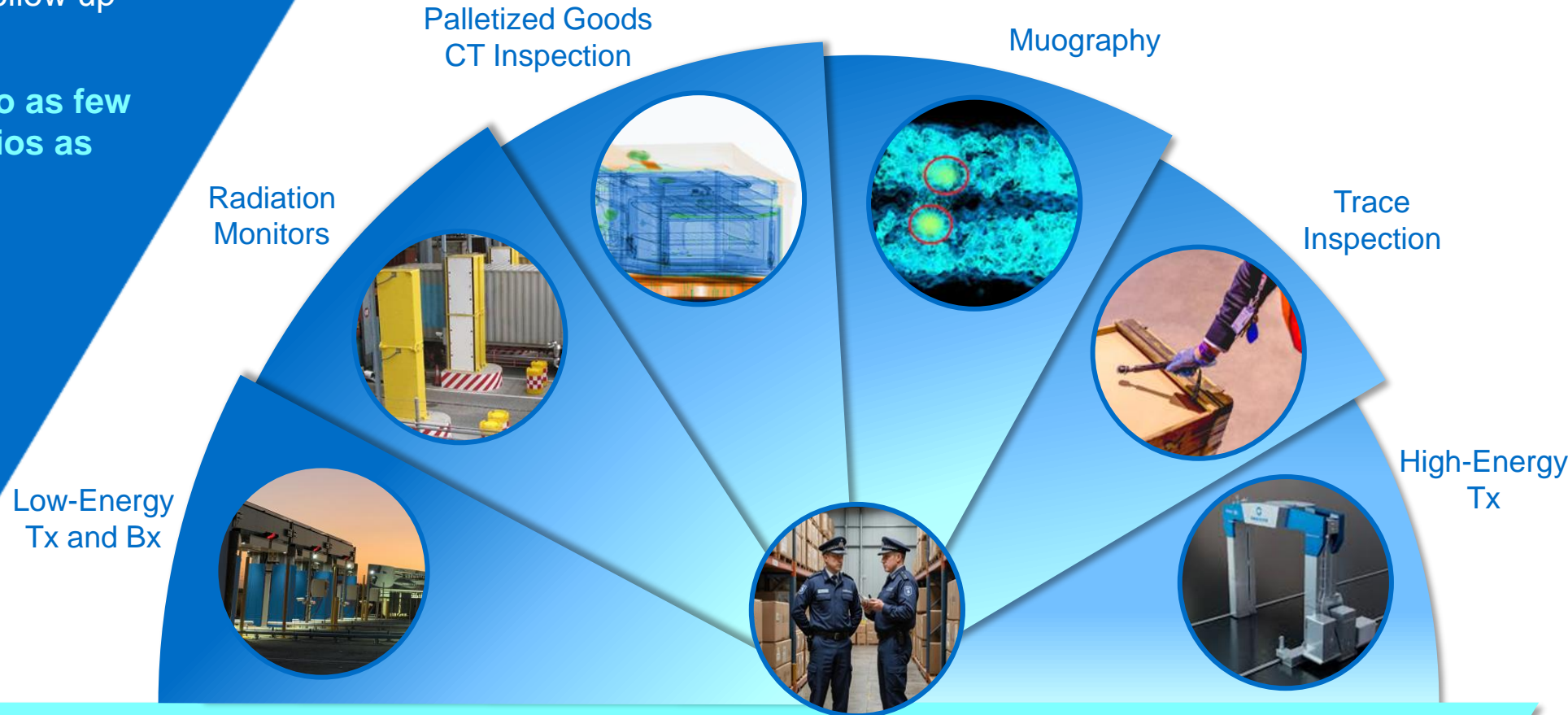
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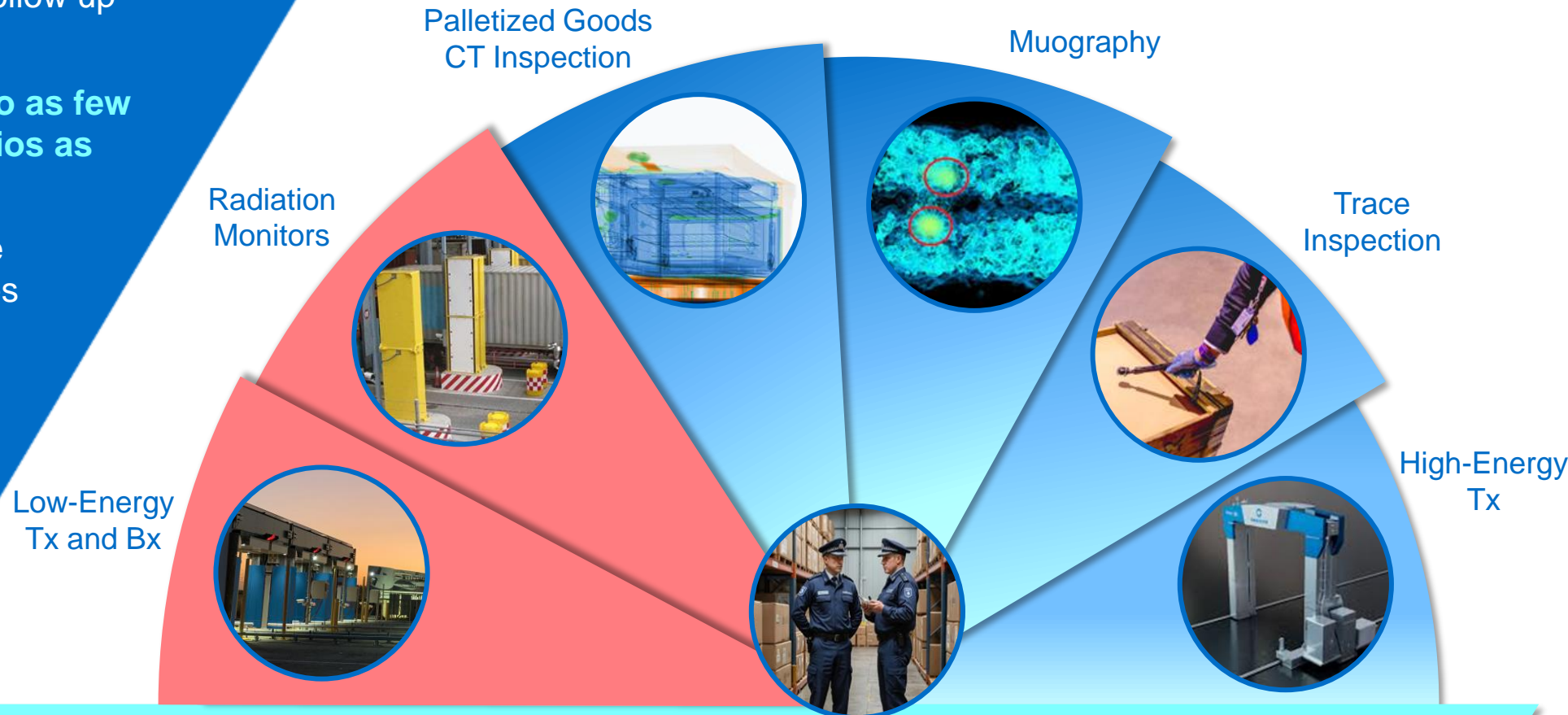
—WCO/WTO Study Report on Disruptive Technologies, June 2022

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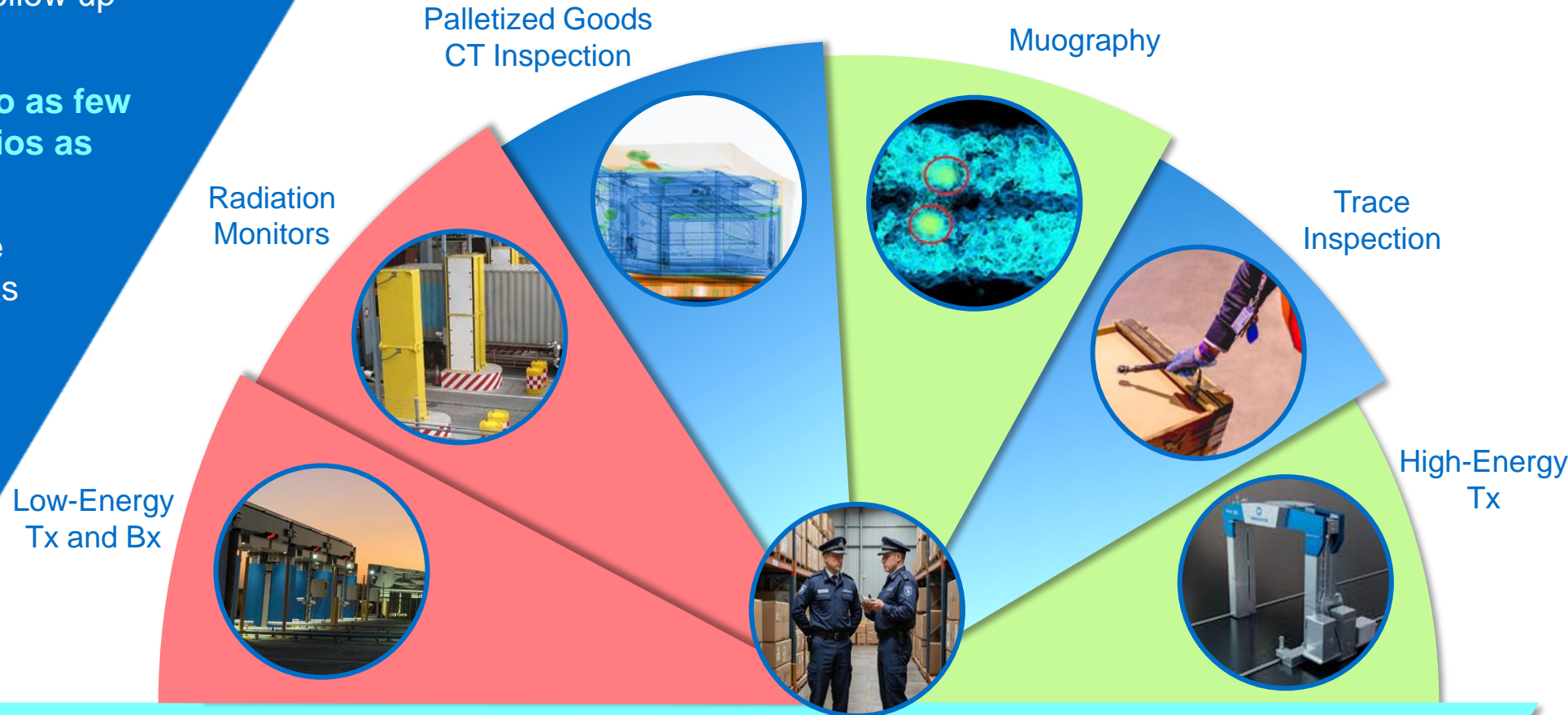
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- **Secondary Inspection:** Targeted inspection techniques to focus on reduced detection phase space



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- **Tertiary....**

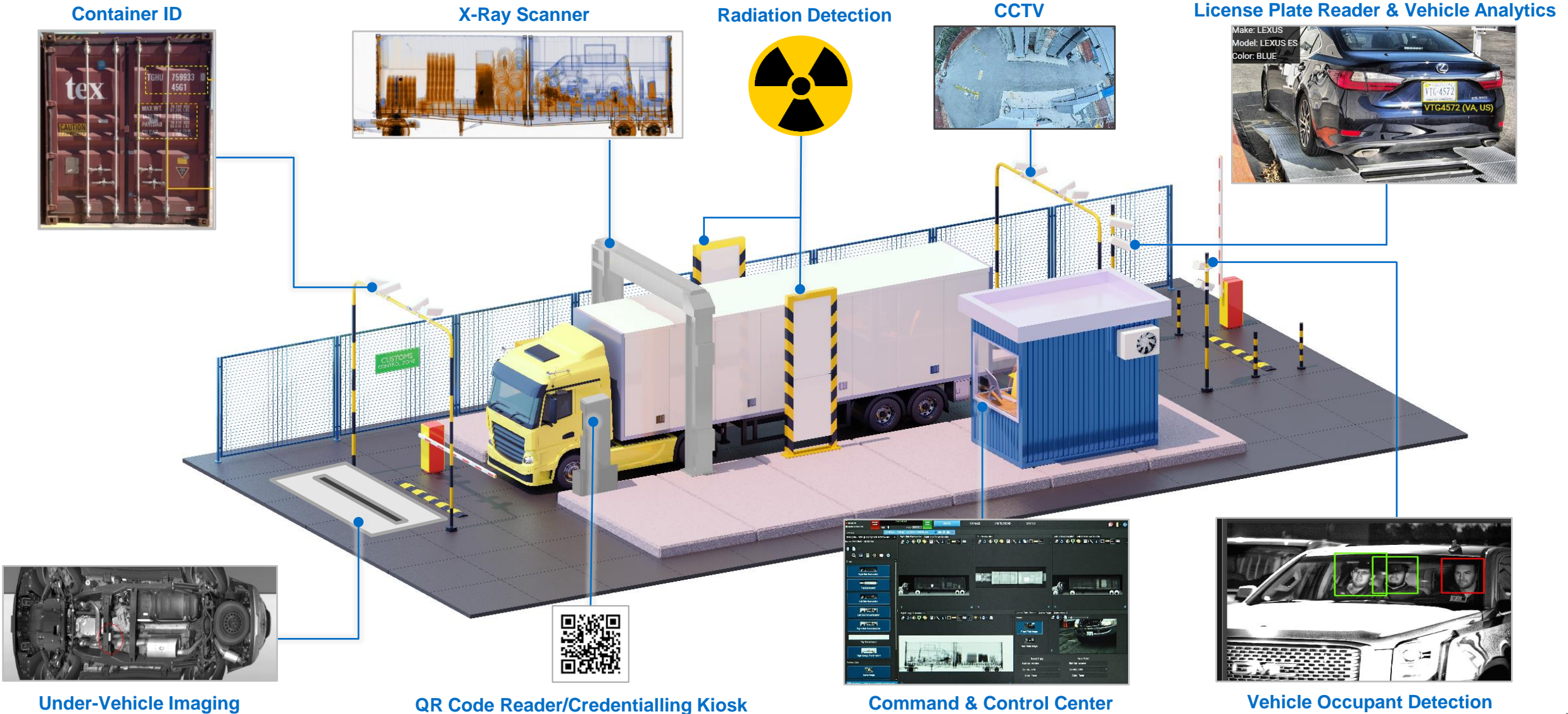


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—WCO/WTO Study Report on Disruptive Technologies, June 2022

Single Screen, Multiple Technologies

“Options for the implementation of emerging technologies must be evaluated based on the services required and the needs of the Organization.” *WCO/WTO Study Report on Disruptive Technologies, June 2022*



Innovation Shifts to Integration

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It is the **integration** of the various technologies deployed concurrently, simultaneously or in series that is driving innovation

- Physical hardware integration – overcome complex issues such as **radiation interference**, total dose exposure limits and **lane management**/temporal sequencing complexities
- Development of AI tools to **combine data from multiple inspection methodologies** to further enhance detection capabilities
- Targeted inspection techniques to focus in on regions of interest to aid in typically more time-consuming **secondary inspection processes**
- Software platforms capable of interfacing with each inspection “node,” **OEM agnostic**, and presenting the information to customs agents in a **cohesive and unified manner**

If targeted innovation is the means to a solution, what is the strategy to accelerate it?

Success Requires a **Multi-Stakeholder-Driven** Strategy

Innovations lessons
from the world's best

○ **Champion Innovation** – fast failure, agility and user-needs centric to bring early TRL developments into customer-adopted technologies more quickly. Sharing of labs, test centres and academic institutions

○ **Government Support** – Financial aid, technology steer and support for pilots, demonstrations and real-world evaluation are key, particularly for new market entrants

○ **Transparency** – Requirements must be shared, and technological capabilities reviewed in open forums that support questioning, honesty and critical evaluation

“Effective strategies require a coordinated, multifaceted approach, leveraging the collective expertise and experience of the global Customs community and its partners.”

— *WCO Illicit Trade Report*, 26 June 2024



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Thank you!

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WORLD CUSTOMS ORGANIZATION
ORGANISATION MONDIALE DES DOUANES