



IGRIS: THE WORLD'S MOST ADVANCED SCANNING TECHNOLOGY.

PROPOSAL BRIEF

THE SYSTEM'S FEATURES, THE BENEFITS AND THE FINANCIAL MODEL.

TELEMATIC MEDICAL APPLICATIONS Ltd

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INTRODUCTION

IGRIS is a neutron based technology that offers a three-dimensional (3D) computerized advanced scanning and detection system and that will analyze the composition of the various substances and materials including organic and contraband constituents transported in:

- i. maritime cargo containers,
- ii. air freight, iii. vehicles, and iv. intermodal containers

IGRIS offers a 99.9999% accuracy and within a few seconds, will identify all substances which may be of interest to Customs Officials, border guards, the military and the police.

ABOUT THE SYSTEM

IGRIS was developed by four dedicated scientists with PhDs in Nuclear Physics. They have spent more than 35 years focused on one primary goal: neutron scanning for detection of contraband, explosives and items of interest to Customs and other authorities.

Dr. Wayne Jones

Dr. Woosley

Dr. Charles Peters

Dr. Ival Toepke



IGRIS has been developing neutron scanning technology using the associated particle time of flight techniques since the 1980s. Several units were constructed and sold to Argonne National Lab in Chicago, the Ministry of Fisheries and Agriculture in New Zealand and to the US Navy Explosive Ordinance Disposal. A prototype for airline luggage scanning was also completed and demonstrated in Springfield VA.

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Congressional Research Service Report for Congress

“Neutron beam technologies offer a potential solution, allowing automated explosives detection capabilities of containerized and palletized cargo”

Pentagon’s JIEDDO (Joint Improvised Explosive Device Defeat Organization) interest in the technology resulted in IGRIS LLC being contracted to build a moving vehicle detection scanner.



Department of Defense:
[http://archive.defense.gov/Contracts/Contract.aspx?](http://archive.defense.gov/Contracts/Contract.aspx?ContractID=4771)
ContractID=4771

- No.: 283-12
- April 17, 2012



What can IGRIS scanners detect?

The IGRIS technology will detect all organic substances of interest that are programmed in the computer. The substances that can be programmed are:

- Explosives; both liquids and solids
- Drugs
- Black powder
- Nuclear and radioactive material
- All organic substances such as tobacco, alcohol, soybean meal, corn, meat, coffee, sugar (and other food products), wood, ivory, minerals, gold, currencies, etc.

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IGRIS scanning technology will scan and identify all substances of interest, based on the list provided by the country.

- The first part of the list, normally prepared by police or national security, deals with security issues and generally includes items such as drugs and explosives. Nuclear weapons and nuclear waste can also be detected.
- The second part of the list is prepared by Customs and describes the items that they would like to tax, either upon import or upon export, to curtail tax evasion.

DIFFERENCE BETWEEN X-RAY AND IGRIS

	<u>X-RAY</u>	<u>IGRIS</u>
Scanning time required	20 sec – 2 min	10 sec
Scanning information produced	Produces images	Detects substances
Information Interpretation	Human interpretation	Computer interpretation
Interpretation time	Up to 10 min	Instantaneous
Accuracy	Dependant on operators skills	99.9999%, detects exact location and volume
Skilled Labour required	Yes	No
Safety	Radiation shielding needed	No radiation shielding needed
Customized for the country	No	Yes

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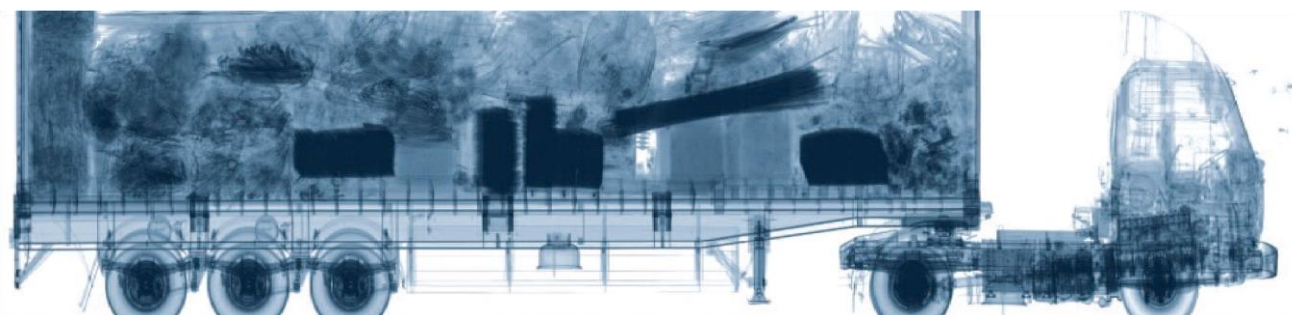
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Size	Large footprint	Self-contained
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X-RAY SCANNERS



IGRIS SCANNERS

Check-point scanner

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Maritime scanner



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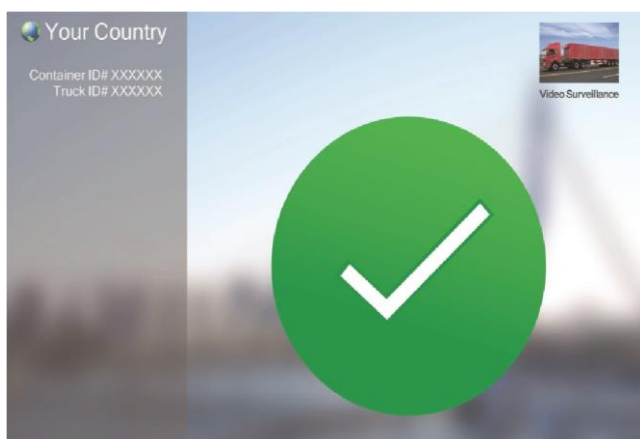
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Airport cargo scanner



RESULTS



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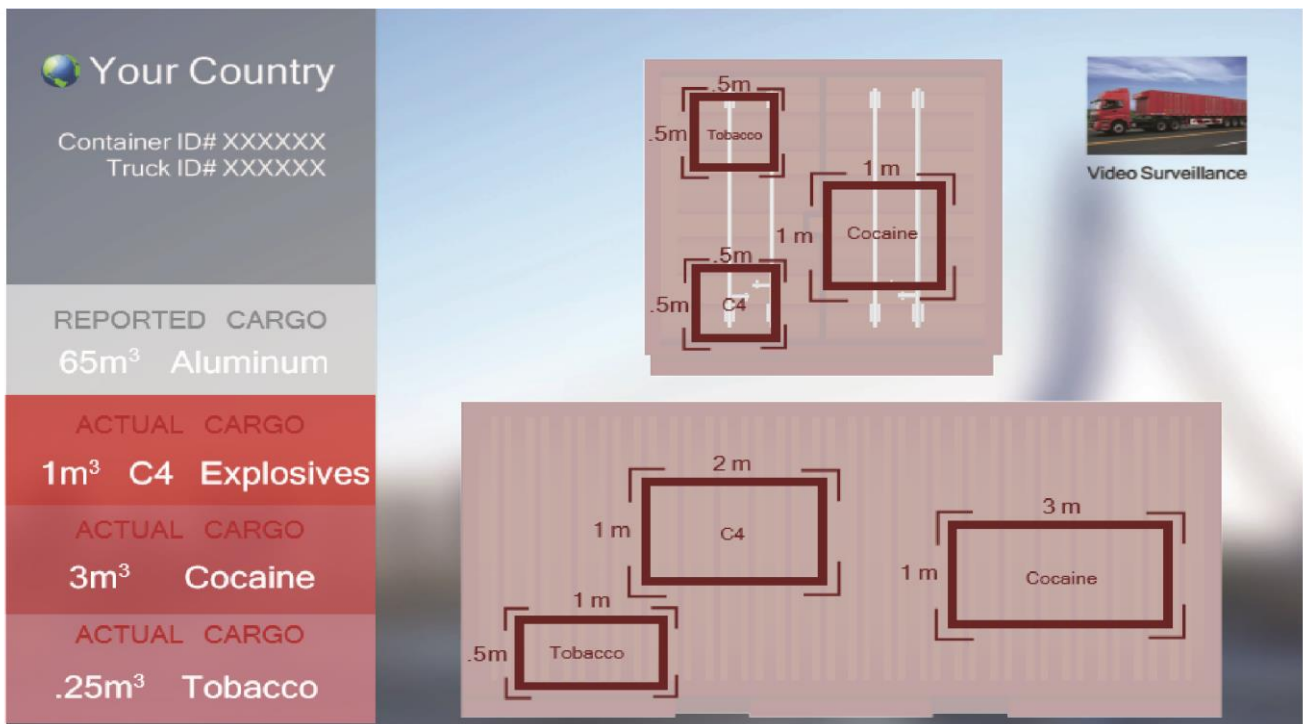
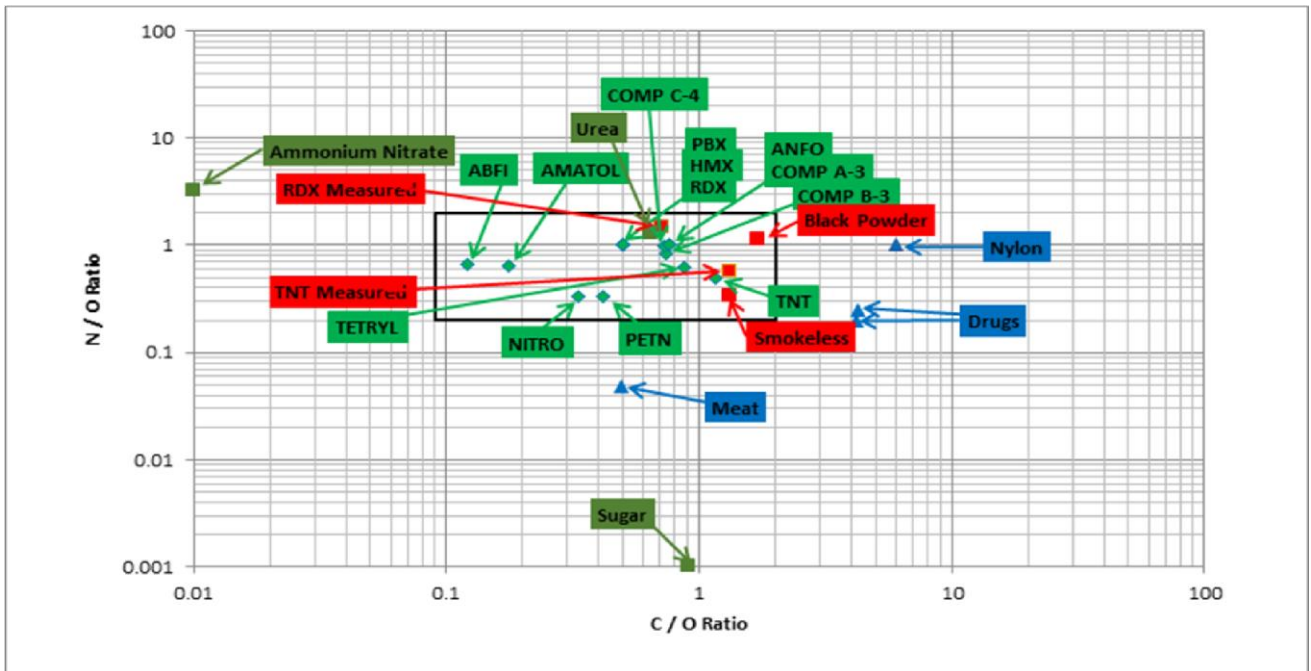
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ACCURACY

Speed (Mph)	Confidence level confirmation of explosives*	Confidence level confirmation of inert object**
5	99.99%	99.99%
10	99.99%	99.99%
15	99.99%	99.99%
20	99.73%	99.99%
25	99.73%	99.99%
30	95.40%	99.70%
35	68.30%	99.70%
40	68.30%	95.40%
45	68.30%	68.30%

* 20 Kg of unshielded RDX in standard automobile trunk

**20 Kg of smoked ham (substance dependent)

THE FINANCIAL MODEL

SUMMARY:

AWS will supply the required number of scanners at no cost to the country under a 10-year services agreement (or BOT or PPP). During those 10 years, AWS will operate, service and maintain the units. After 10 years, AWS will turn over ownership of the scanners to the country (after payment of a nominal amount representing the depreciated value). The equipment will remain under warranty for an additional 10 years.

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To finance the operation, AWS (or the designated authority) will collect a fee on all containers and/or vehicles and/or airport cargo, by a virtue of a Decree to be adopted by the country.

One of the financial models that AWS can offer is based on shared revenues, whereby AWS and the government will divide the revenue which will be paid either monthly or yearly for the duration of the contract. For example, using a volume of one million TEUs and a fee of one hundred US dollars per TEU (\$100 USD/ TEU), AWS estimates that the country would receive approximately forty million US dollars annually (\$40M USD), i.e. four hundred million US dollars (\$400M USD) over 10 years. The revenue will fluctuate depending on the actual volumes of TEUs or vehicles.

AWS can also offer the option of monetizing the future revenues whereby, after the collection and remittance of the fees have begun and within 150 days after the deployment of the scanners, we sell up to 80% of the future revenues at a discount. This operation will generate a lump sum which will enable AWS to make an upfront payment to the government on revenues that have yet to be collected. For example, using the volumes mentioned above and the same fee structure, AWS estimates that it would be able to distribute to the country an upfront amount up to one hundred and eighty-five million US dollars (\$185.0M USD). Then, on an annual basis, the country would receive an additional eight million US dollars (\$8.0M USD), i.e. eighty million US dollars (\$80.0M USD) over 10 years, for a total of \$265.0 M USD. The annual amount represents the remainder of the country's share of the proceeds (the 20% not sold upfront). The upside of this option is the immediate access to a large sum for the government. On the other hand, the monetizer will apply a discount rate and will also factor in the present value of money, which will thus reduce the total amount of revenues paid over the life of the contract.

A third-party ("Local Operator") could be assigned to provide the labor required to operate and maintain the scanners. In such a case, the Local Operator will get compensated by a pre-determined share of the revenue.

In addition to the foregoing, the country will receive 100% of the increased customs duties.

A customized proposal will be submitted to the country once we receive the relevant information and data.

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THE FINANCIAL MODEL CONTINUED

SERVICE AGREEMENT TERMS

Shared Revenues

AWS and the Government share the revenues. maintain 4 maritime ports based on a **Infrastructure Fee** of The Government will collect from shippers and remit daily, a fee of \$100 120 USD per TEU. Government. provided equipment is clear of any debt liens and

Services Agreement annually for up to ten (10) additional years.

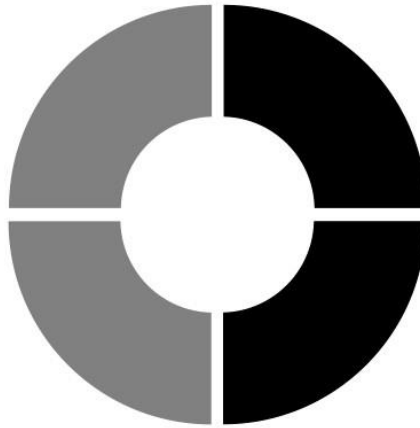
BENEFITS TO THE COUNTRY

Non-Monetized Risk

AWS will make a yearly No \$40M USD to country, only a remittance of the

Monetized

AWS will make a lump-sum payment (within 150 days the deployment of the scanners) of up to \$185.0M Years, the Government and \$8.0M annually. increase customs



Scanners

AWS will provide, operate and will IGRIS scanners at one volume 1,000,000 TEUs.

Term

months, no upfront cost to At 121st month all assigned to Government free and the government has the option to renew terms of the



investment risk to the payment of guarantee of the Government. infrastructure fee.

Total Economic Benefit

\$1.4 Billion USD (Nonafter Monetized) or \$1.26 Billion to (Monetized) over 20

plus the expected significant revenues.

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