

# TIC

**TANTALUM-NIOBIUM INTERNATIONAL STUDY CENTER**

## Denial of Transport of NORM

Ulric Schwela

Chair of the International Steering Committee on  
Denial of Shipment

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EAN-NORM

Hasselt, 29<sup>th</sup> November – 1<sup>st</sup> December 2011

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# Contents

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- Defining NORM in Transport
- Defining Denial of Shipment
- ISCDOS
  - Structure
  - Work carried out
- Way Forward

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# NORM or Normal?

- Three parameters determine NORM for transport:
  - Intended end use of the material
  - All radionuclides are natural (K-40, Th-nat, U-nat)
  - At least one radionuclide above exemption level
- What if the NORM is below the transport exemption levels?
  - Then during transport, it is *not* NORM, it is normal material!

# Intended End Use of the Material?

- For NORM not extracted for the use of the radionuclides, a factor of 10 increase in the exemption level applies; e.g.:
  - 1 Bq/g exemption level becomes 10 Bq/g
  - Intended as a balance between radiological protection and practical inconvenience of regulating large quantities of low activity materials
  - No radiation protection justification could be found for the restriction according to end use
- The factor of 10 will soon apply to all NORM

# What exemption level?

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- Only the following are of concern:
  - K-40: 10 Bq/g
  - Th-nat: 1 Bq/g (values for progeny vary!)
  - U-nat: 1 Bq/g (values for progeny vary!)
- The factor of 10 for NORM increases all these levels

# International Regulatory Framework



29<sup>th</sup> November - 1<sup>st</sup> December 2011

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# National Regulatory Framework

- Each country implements the TS-R-1 regulations – often with additional regulations
- Regulatory disharmony results in carriers denying shipment
  - Major carrier official statement: “...in principle not opposed to carrying...radioactive cargo” and “...will consider carriage...provided...transit restrictions are lifted...”



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# What is a delay/denial – when and...

- A refusal (explicit or implicit) to carry a shipment of radioactive material though it conforms to all the applicable Regulations
- *Includes where physical capability exists, but those involved refuse to accept a product*
- *Does NOT include where physical capability to handle product is not in place*

...where

- Denial Ports termed “Hot Spots”
- Every negative factor affects sustainability

→ some shipments are impossible for years

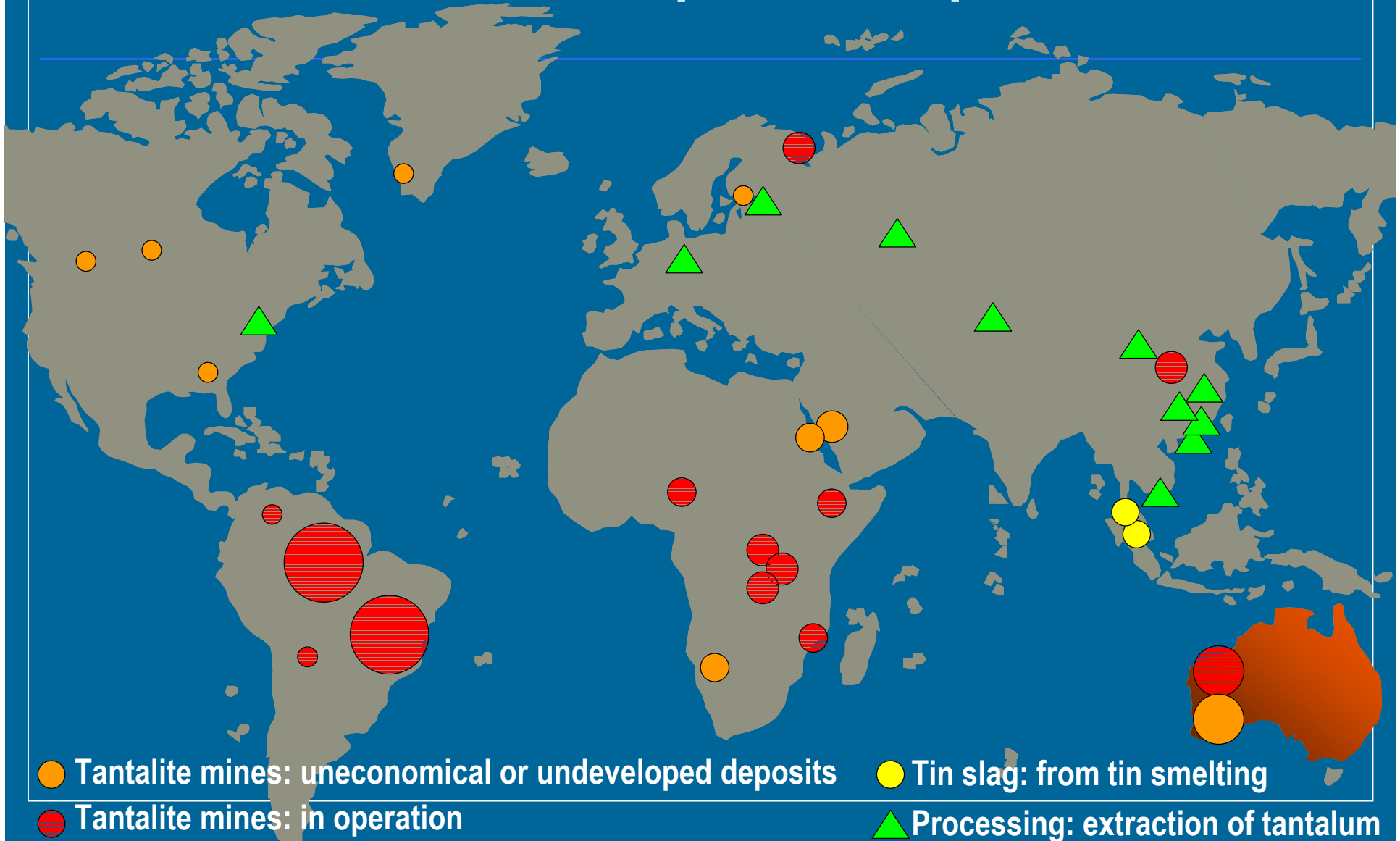


# Materials Affected by D/D

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- All Radioactive Materials:
  - Radiopharmaceuticals, carried by air
  - Cobalt-60, carried by sea
  - Molybdenum-99, carried by air
  - Tantalum raw materials, carried by sea
  - Uranium yellowcake, carried by sea
  - *Potentially: phosphate rock; zircon; rare earths*

# Tantalum transport requirement



Source: T.I.C. estimate 12-Oct-2010, tantalite and tin slag size by most likely resource base

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# Tantalum in your life



# ‘Who cares?’ – The impact of a delay or denial



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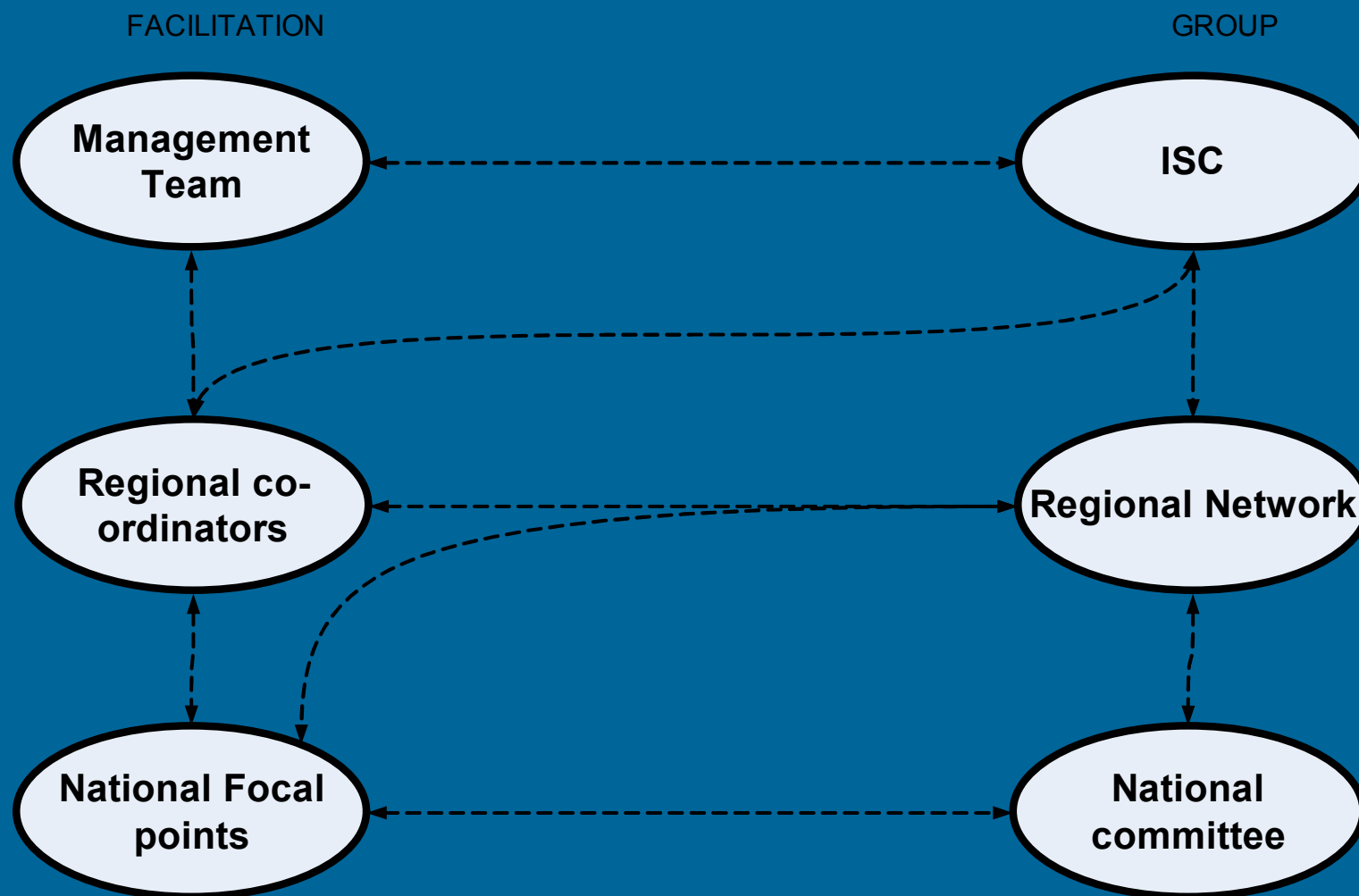
- Defining NORM in Transport
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# ISCDOS Formation

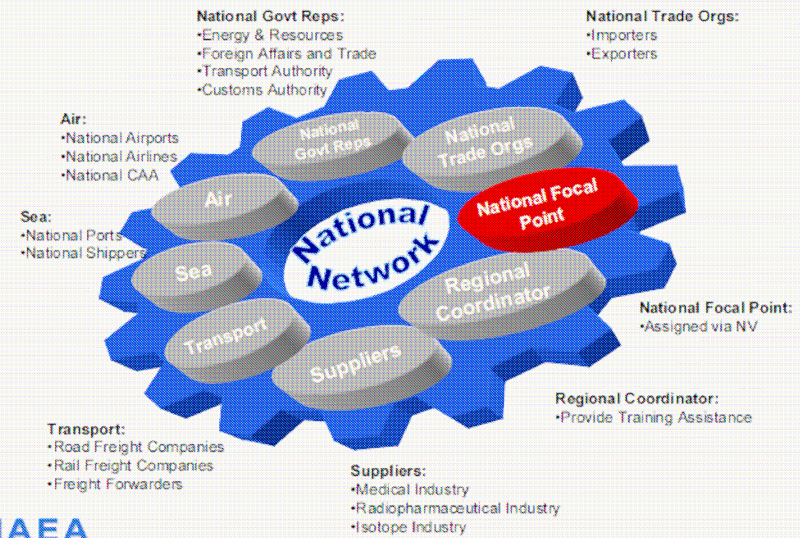
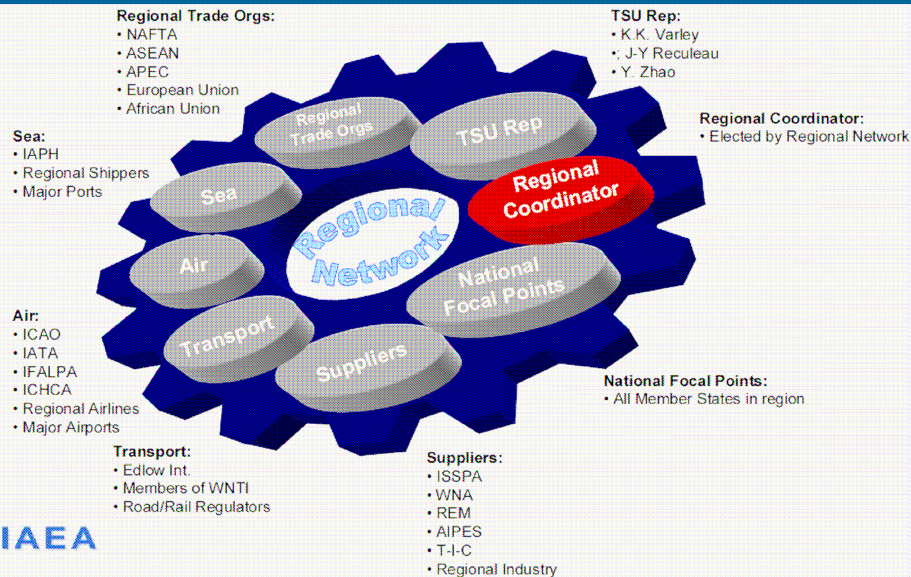
- 2003-Jul: IAEA Transport Conference
- 2006-May: meeting on delay and denial
- 2006-Nov: ISC 1, Initial Membership:
  - IAEA, ICAO, IMO
  - IATA, ICHCA, IFALPA (ACI, IAPH, WTO)
  - IAEA Member States
  - Transport – Edlow International; Isotopes – ISSPA
  - Industrial ores – T.I.C.; Nuclear industry – WNTI
- **Encourage carrier membership – key player**

# ISCDOS Organisational Structure



# ISCDOS Organisational Structure

- Management Team oversees networks *via*:
  - RCs; NFPs; Modal Organisations; transport industry



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# Action Plan

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- Six thematic areas
  - Awareness
  - Communication
  - Economic
  - Harmonisation
  - Lobbying
  - Training
- Task Tracking
  - Ongoing
  - To be completed
  - Completed
- *Regional AP*
  - *Led by RC*
- *National AP*
  - *Led by NFP*

Report Form

DIFFICULTIES ENCOUNTERED IN RELATION TO THE CARRIAGE OF  
CLASS 7 DANGEROUS GOODS – RADIOACTIVE MATERIAL

# Awareness – Database

Report submitted by:<sup>1</sup> \_\_\_\_\_ Date of Report (dd/mm/yyyy): \_\_\_\_\_

**Details of Product Shipped**

Product name	
UN number	
Product name	
Dangerous Goods Class or Division	
Shipment reference number (consignor ID)	

IAEA / ICAO / IMO

225+ reports; analysis 2011-Jul for air and sea

Since 2009, 182 reports, 94 maritime:

92 denials

76 for <sup>60</sup>Co

56 due to carrier unwillingness to transport

The carriage of this consignment was \_\_\_\_\_

**Details of Consignment**

Consignor					
Consignee					
Carrier					
Mode of transport:	Air <input type="checkbox"/>	Sea <input type="checkbox"/>	Rail <input type="checkbox"/>	Road <input type="checkbox"/>	Transit <input type="checkbox"/>
Name of aircraft/ship/vehicle					
Type of aircraft/ship/vehicle					
Aircraft tail/IMO ship/vehicle identification number					
Flight number/voyage reference/route reference					
Location of loading: (Airport/Port/ Pickup)	City/Town/State				
	Country				
	Date				
Origin Airport/Port/City					
Arrival Airport/Port/City					

**Details of Difficulty**

Date of difficulty	
Name of entity with whom the alleged difficulty	
Location(s) and date(s) of transit	
Brief description of events	
Reasons stated for difficulty of carriage	
Actions taken to resolve difficulty (if any)	
Consequences of the development(s)	
Other relevant information or comments	
Suggestions (if any)	

**Details of Contact**

Name	
Title	
Address	
City, State, Country, Postal Code	
Telephone Number	
Email Address	

<sup>1</sup> Name of Member Government's Civil Aviation, Maritime Administration or other Government Organisation or Non-Governmental Organization with consultative status, Manufacturer/Producer/Shipper submitting the Report.



# Awareness – Database



Global Integrated Shipping Information System

Feedback | Log In

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IMO Members

## Welcome to GISIS



### Maritime Security

Information communicated under the provisions of SOLAS regulation XI-2/13 (SOLAS chapter X1-2 and the ISPS Code).



### Recognized Organizations

Information submitted by Member States under MSC/Circ.1010-MEPC/Circ.382.



### Port Reception Facilities

Data on the available port reception facilities for the reception of ship-generated waste.



### Piracy and Armed Robbery

Reported incidents of piracy and armed robbery.



### Contact Points

Electronic database for Contact Points.



### Information on Local Regulations

Information submitted by Administrations on local regulations.



### MARPOL Annex VI

Notifications communicated under the provisions of MARPOL Annex VI (Regulations for the Prevention of Air Pollution from Ships).



### Condition Assessment Scheme

Electronic database for the implementation of the Condition Assessment Scheme - Resolution MEPC.94 (46), as amended.



### Marine Casualties and Incidents

Data on marine casualties and incidents, as defined by circulars MSC-MEPC.3/Circ.3.



### Pollution Prevention Equipment

Pollution prevention equipment required by MARPOL 73/78.



### Simulators

Information on simulators available for use in maritime training.



### Greenhouse Gas Emissions

Based on the Interim Guidelines for Voluntary Ship CO<sub>2</sub> Emission Indexing for Use in Trials (MEPC/Circ.471).



### IMDG Code

Reported cases of disparities between versions of the IMDG Code.

( <http://gisis.imo.org/Public/> )

# Awareness – Conferences

## ■ NORM

- 2009, 2010 Dresden
- 2010 Marrakech
- 2011 Hasselt
- 2012 Tallinn

## ■ PATRAM

- 2004 Berlin
- 2007 Miami
- 2010 London

- 2013 San Francisco

## ■ RAM Transport

- 2006 London
- 2009 Manchester
- 2011 Vienna
- 2012 London

## ■ Industry meetings

- CINS, ISSPA, T.I.C., WNA, WNTI



# Communication – Strategy

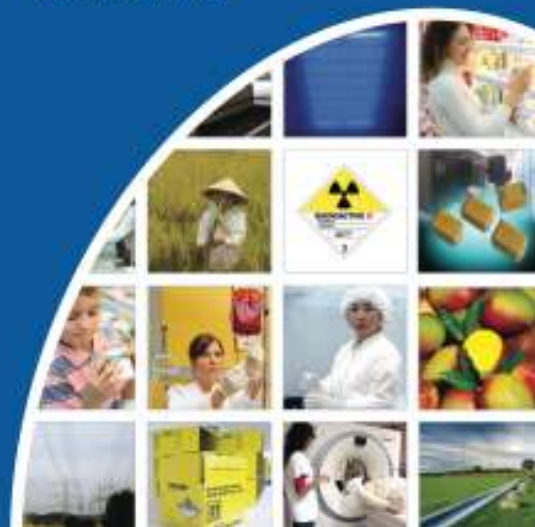
- Key Messages:
  - Exemplary Safety Record; 50 years of RAMT Regulations

- Strategy Action Plan

- Actions postponed by Fukushima
  - Brochure completed
  - Fact sheets, tool kits

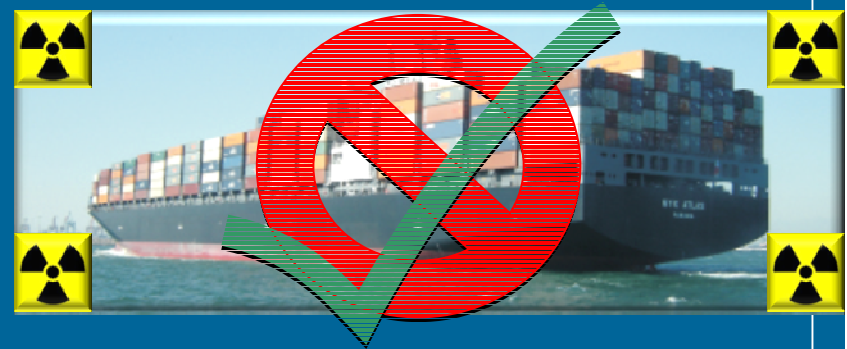


Call for action —  
to sustain the  
transport of  
radioactive material



# Communication – Strategy

- Strategy Action Plan continued...
  - PROTRAM
  - Video development
    - Iran: public information
    - Transport Safety film
    - Plans for extension to:  $^{60}\text{Co}$ ; tantalum raw materials
  - Website
    - <http://goto.iaea.org/denialofshipment/>
- Challenging inaccurate trade journal articles



# Harmonisation

- IATA list of variations
  - 240 variations directly/indirectly affecting Class 7
- ICAO Technical Instructions
  - 156 variations directly/indirectly affecting Class 7
- IMO
  - Requires proposal to FAL committee to compile this
- **Better to have some information than none – consignors need an initial central source**
- Member States encouraged to advise IAEA of additional regulations and/or variations

# Lobbying – Successes

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- Long Beach, CA, USA
  - Expected to lift Class 7 restriction soon
  
- South Africa
  - Edlow International obtained transit licence for uranium yellowcake
  - Planning to obtain transshipment licence

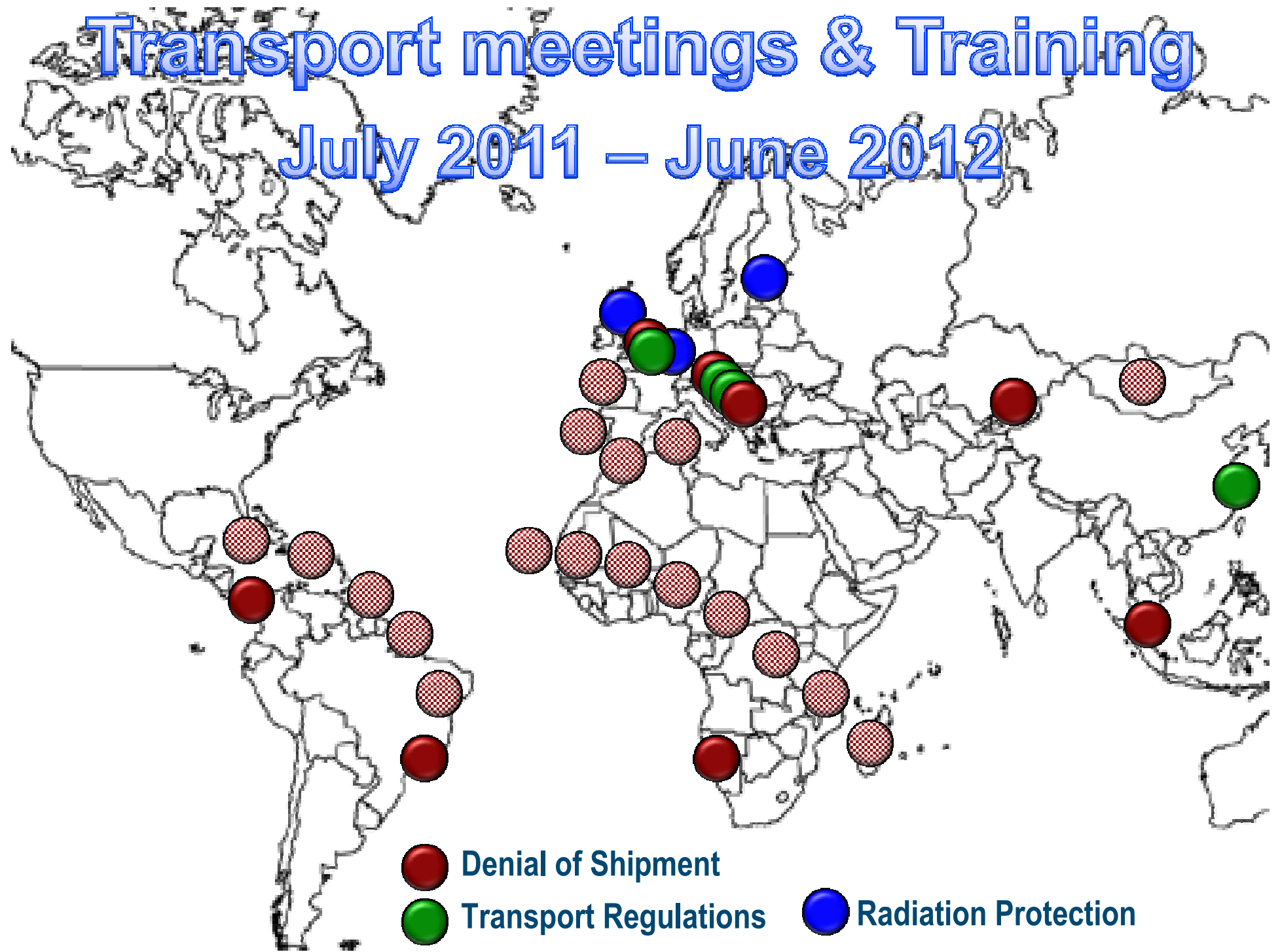
# Training

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- Member State hosted training
  - Brazil, Cuba – National Networks
  - Malaysia, Philippines – workshops
    - Industry
    - Senior port authority staff
    - Stevedore and warehouse line managers
- IAEA Technical Cooperation training
  - Panama; more planned
- Industry led training
  - WNTI workshop in Namibia

# Transport meetings & Training

July 2011 – June 2012



# Training in Panama



29<sup>th</sup> November - 1<sup>st</sup> December 2011

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# IAEA 55<sup>th</sup> General Conference

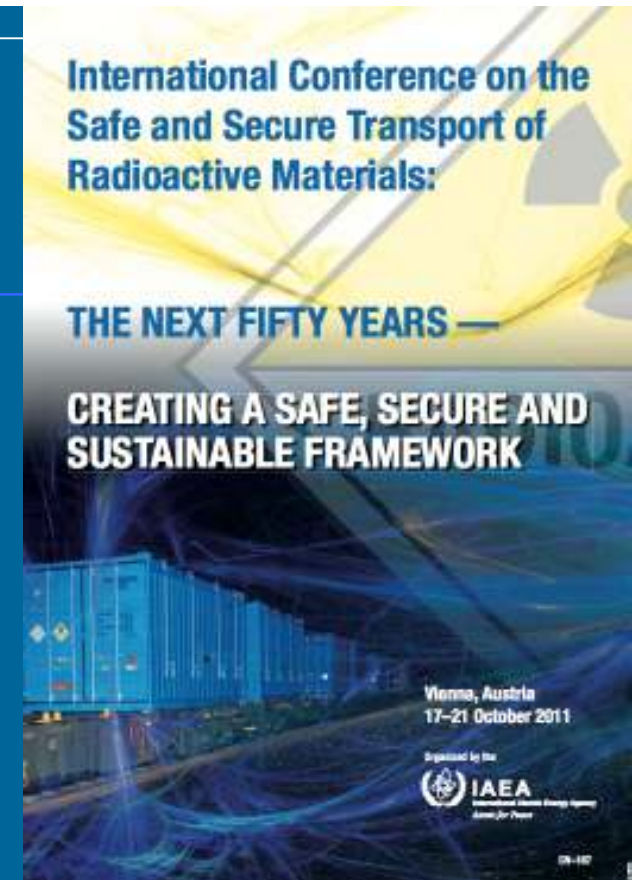
**GENERAL  
CONFERENCE**

- “Meet the Experts”
- Noting that the timely shipment...is being affected by incidents of denial and delay of shipment...
- Welcomes and encourages efforts....calls upon Member States to facilitate the transport...to each nominate a national focal point....looks forward to a satisfactory and timely resolution...
- Underlines the....importance of....programmes for education and training...
- Submitted by 49 countries



# IAEA Transport Conference

- DOS Presentation by Paul Gray
  - Health & Welfare; Supply Chain; Challenges
  - Reasons for Denial; Progress; Solutions
- 255 participants; 60 countries; 54 papers
- “The transport regulatory system (both safety and security) needs to be harmonized to avoid conflicts and varying requirements.”
- “Denial of shipments can adversely affect security – e.g., if a package is left at a facility, it may be misplaced or abandoned. Efforts to reduce denials have both safety and security benefits.”



# Future Meetings

## ■ ISC 7

- 02/12 Vienna – invited Air Canada and Hapag Lloyd



## ■ IRPA 13

- 05/12 Glasgow – IAEA presentation



## ■ RAM Transport

- 05/12 London – Proposed paper on DOS



## ■ EUNORM

- 06/12 Tallinn – Proposed paper on DOS



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# Denials into Facilitation – Industry

## ■ Industry Action

- Meet the Senior Management of the maritime company to provide awareness on the issue of denial
- Any shipping line policy of no carriage of Class 7 to be passed on to IMO for its awareness

## ■ Industry Action

- **Pre-requisite:** all solution paths must have been explored by industry first.
  1. Industry/IAEA contact National Focal Point or National Liaison Officer, then Regional Coordinator;
  2. ISC-MT advises IAEA on upgrading instance;
  3. IAEA contacts Permanent Mission in Vienna with form on perceived Denial.

# Denials into Facilitation – IAEA

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- IAEA provides a global **networking structure** for the transport of radioactive material, with a special focus on facilitating denials of shipment.
- The **quality of the networks and their outputs** rely mainly on Member States to create and maintain National Networks, and partly Regional Networks.

# How to move forward?

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- Regulators - Additional Regulations:
  - Identify and justify; advise the IAEA
  - Integrate or eliminate; harmonise TS-R-1
- Industry - Report Instances:
  - Timely report submission to NFP/RC/IAEA
- IAEA - Ongoing Maintenance Required:
  - Regular communication & training

# Reminder

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**Thank You**

**ANY QUESTIONS?**



The logo consists of the letters 'TIC' in a bold, serif font, colored dark blue, set against a light grey rectangular background.

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