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US EXPORT CONTROLS &  
CLOUD COMPUTING

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# WHAT IS CLOUD COMPUTING?

- “Cloud Computing” is a broad term with varied meanings depending on the persons engaged in discussing it, providing it or seeking to use it.
- Primarily involves provision and / or use of a shared reservoir of computers, hardware, software, servers, storage facilities and/or computational functionalities “virtually” linked by and through the internet.
- Cloud Providers effectively rent out computers and computational resources to a pool of temporary or regularly repeating “tenants” or Cloud Users who acquire contractually stipulated use rights to the cloud provider’s virtual premises on an as needed basis.

# WHAT IS CLOUD COMPUTING?

**Cloud Provider** supplies, manages and provides to Cloud Users outsourcing services for “virtual” computing “architecture” and IT resources to Cloud Users - like a landlord manages a luxury rental apartment.

## **Computer architecture and IT resources include:**

- Servers
- Routers
- Storage Devices
- Storage and Computational Capabilities
- Firewalls
- VPN access for Cloud Users

# WHAT IS CLOUD COMPUTING?

**Cloud User** outsources to Cloud Provider select IT functions.

IT functions that can be outsourced include:

- **Webmail**
- **Data storage and back-up storage**
- **Data access capabilities**
- **Computational capabilities**
- **Capabilities for collaborating on software and technology projects**

# WHAT IS CLOUD COMPUTING?

Cloud computing enables Cloud Users to reduce their investments in computer architecture and IT resources while simultaneously expanding their IT capabilities.

## What's the down-side for Cloud Users?

Cloud computing operates in a “virtual environment”

- Cloud Users may not know where the Cloud Providers' servers are located, where the Cloud Provider routes the Cloud Users' data and whether or not the Cloud Provider is making any “deemed exports” of the Cloud User's technology / data to the Cloud Providers' Foreign National Employees

# WHAT IS CLOUD COMPUTING

- The location of one or more of the Cloud Provider's computers or servers may be physically outside of the United States, e.g., in Elbonia
  - Thus, merely by uploading, accessing and/or downloading its own data from its own location in the US, a cloud user may unknowingly and unintentionally send data or information outside the United States

## What's the down-side for Cloud Providers?

Cloud computing operates in a “virtual environment”

- Cloud Providers may not know the location of Cloud Users who are accessing and downloading data from their Cloud

# EXPORT CONTROLS

## What's the down-side for Cloud Users and Cloud Providers?

### US Export Controls!

NO definition of “Cloud Computing” provided in the Export Administration Regulations [EAR] or in the International Traffic in Arms Regulations [ITAR] or in OFAC’s various sanctions regulations

# EXPORT CONTROL

- Under the EAR and ITAR, as well as OFAC's sanctions regulations, the unknowing and unintentional transmission or re-transmission of US export-controlled technical data or technology/information to or from Elbonia for computational operations, storage or any other purpose is an export / re-export subject to the US regulations.
- Encryption of technical data or technology does not change this result.
- The export control regimes all impose strict liability for inadvertent civil/administrative violations of unlicensed exports of technical data or technology/information



# CLOUD COMPUTING AND ITAR/DDTC



# CLOUD COMPUTING AND ITAR / DDTC

- DDTC which administers ITAR has **NOT** provided any formal written guidance on the application of ITAR or DDTC's enforcement policy with respect to export control violation exposure - either for Cloud Computing service providers or users
- We are informally advised that DDTC will strictly apply the ITAR pursuant to its provisions to all aspects of cloud computing and would so informally advise you in any one-on-one interaction you initiate with DDTC

# CLOUD COMPUTING AND ITAR / DDTTC

“Export” under ITAR means “sending a defense article out of the US in any manner” ITAR 120.17(a)(1). Defense article includes technical data ITAR 120.6.

**Thus, the de facto DDTTC position for Cloud Users appears to be:**

- A cloud user may be exposed to an unlicensed export or re-export violation if the cloud user’s ITAR-controlled tech data is sent or transmitted from the US or a third country to Elbonia as part of a cloud computing computational process initiated by the cloud user.

# CLOUD COMPUTING AND ITAR / DDTTC

**And the de facto DDTTC position for Cloud Providers appears to be that a cloud provider may be exposed to an ITAR violation of:**

- **Causing an unlicensed export when the cloud provider transfers ITAR controlled tech data from a US server to a foreign server**
- **Causing an unlicensed re-export when the cloud provider transfers ITAR controlled tech data from one foreign server to another foreign server**
- **Providing “defense services” without a required authorization if the cloud computing user is a foreign person**
- **Making an unlicensed export of ITAR controlled tech data when the cloud provider provides a foreign national employee access to a cloud user’s ITAR controlled tech data**

# CLOUD COMPUTING AND OFAC



# CLOUD COMPUTING AND OFAC

- OFAC which administers and enforces various trade sanctions and embargoes has **NOT provided any formal guidance** on the application of OFAC's enforcement policy with respect to sanctions violation exposure - either for cloud providers or cloud users
- OFAC's likely concern would be that no blocked person or SDN receives cloud computing services from a US cloud provider and that such services are not provided to any person in certain countries, i.e. services to Syria.

# CLOUD COMPUTING AND BIS



# CLOUD COMPUTING AND BIS

- Unlike DDTC and OFAC, BIS has formally addressed the export control implications of cloud computing by issuing 2 written advisory opinions
- **BIS advisory opinion guidance applies only to facts discussed in the advisory opinions**
- BIS advisory opinions interpret EAR but do not change EAR
- **BIS advisory opinions address only cloud providers – it does not address cloud users**
- BIS position cannot be assumed to be applicable by analogy to enforcement policies or actions by DDTC/ITAR or OFAC or any other USG agency



# CLOUD COMPUTING AND BIS

- BIS issued Advisory Opinion # 1 on January 13, 2009 [AO#1] with respect to 5 specific cloud computing questions which were posed to BIS by a US-based cloud computing service provider
- [www.bis.doc.gov/policiesandregulations/advisoryopinions.htm](http://www.bis.doc.gov/policiesandregulations/advisoryopinions.htm)

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- **Question #1** – Whether cloud computational service in the absence of any transfer of software or technology subject to the EAR is subject to the EAR under 15 CFR Part 734?
- **Response to Question # 1:** BIS confirmed that cloud service of providing access to computational capacity -- as distinct from downloading EAR-controlled software/technology -- is not subject to the EAR.

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

### Response to Question # 1 (cont'd)

- However, if cloud provider transfers or transmits **software** and such software is subject to EAR, an export of software by the cloud provider would occur
- If cloud provider transfers or transmits **technology** in the form of tech data (i.e. manuals, instructions, plans) or technical assistance that is not publicly available in order to give a customer-user knowledge on how to access and use the computational capacity provided by the cloud service, that technology would be subject to the EAR and a BIS export license may be necessary

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- **Question # 2** – Whether cloud computing services constitute a BIS licensable EAR-controlled “activity unrelated to exports” under EAR 744.6(a)(2)?
- **Background** - Some activities not related to exports are nevertheless subject to EAR license requirements
- EAR 744.6(a)(2)(i) requires US person obtain license from BIS before performing any “contract, service or employment “ that assists in the design, development, production or use of missiles in or by a country in Country Group D:4

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- Also EAR 744.6(a)(2) (ii) requires a US person to obtain a license from BIS before performing any “contract, service or employment “ that that the US person knows will directly assist in design, development, production, stockpiling or use of chemical or biological weapons in or by a country anywhere in the world
- **BIS Response to Question # 2:** Providing cloud computing services is subject to the restrictions in EAR 744.6(2)

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- If Cloud Computing service provider **“knows”** that provision of the services will support such proscribed 744.6(a)(2) activities – the provision of the service to such user requires a BIS license which the cloud provider must obtain
- **“Knows” for EAR purposes is defined in EAR 772.1 – not only actual knowledge, but also an awareness of a high probability**

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- **Question # 3** - Whether Cloud Computing service providers are “exporters” subject to the EAR of any derivative data resulting from the user’s use of the cloud’s computational capacity?

In other words, is the service provider an “exporter” when the user exports EAR-controlled data stored on the computational capacity or the user exports EAR-controlled data resulting from the user’s use of the computational capacity?

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- **BIS Response to Question # 3**
- **No – the Cloud Computing Service provider is not an “exporter” subject to the EAR.**
- **EAR 772.1 defines “exporter” as “person in the US who has the authority of a Principal Party In Interest to determine and control the sending of items out of US” and receives the “primary benefit” of the transaction**



# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- BIS found that the **user** of the cloud computing services is the Principal Party In Interest and thus the user of the services is the “**exporter**”
- Thus the cloud service provider is not the Principal Party In Interest and is therefore not the exporter

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- **Question # 4** – Whether computational access restrictions found in EAR 740.7(b)(2) of License Exception APP applies to Cloud Computer service providers?
- **Background** - EAR 740.7 prohibits nationals of Cuba, Iran, North Korea, Sudan & Syria from accessing either physically or computationally, computers and software exported under License Exception APP

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- **The issue for EAR 740.7 is whether the mere addition to a cloud service to a computer system which is subject to License Exception APP access restrictions, would extend the proscribed national prohibition to all users, wherever located.**

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

### BIS Response to Question # 4

- BIS stated the EAR 740.7 restrictions were intended to apply to individual systems for which access to those individual systems can be identified.
- BIS advised that EAR 740.7(b)(2) does NOT apply to cloud computing environment when multiple systems may accessed and it is impossible to distinguish individual access

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- **Question # 5** – Whether the Cloud Computing Service provider **MUST** Inquire about the nationality of the User of the service?
- **BIS Response to Question # 5: Cloud service provider is not the “exporter” and is therefore not subject to the EAR. Accordingly, nationality screening by service provider of its users is not required**

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 1

- **However**, in order to comply with EAR 744.6(a)(2)(i) restriction affecting Group D:1 countries, the service provider “should take into account” the **country location** of the user if the service provider “knows” that the user will be involved in certain missile activities
- BIS further noted that EAR 744.6(a)(2)(i) applies to activities in or by a **country in Group D:4 and not to nationals of D:4 countries who are located outside of D:4 countries**

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 2

- BIS issued Advisory Opinion # 2 on January 11, 2011 [AO#2] with respect to **deemed export question** posed to BIS by a US-based cloud computing service provider
- **Question 1** - Does the EAR require cloud computing service providers to obtain deemed export licenses for foreign national IT administrators/employees who service and maintain the provider's cloud computing systems?

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 2

- **BIS was asked to assume all of the following facts as posed by cloud service provider seeking the answer to Question 1.**
  - i. IT applications allow users to access applications from the internet “in the cloud”**
  - ii. Data, software and applications and computer processing are accessed from clouds of online resources including servers rather than downloaded and stored locally on local hard drives or local servers**



# CLOUD COMPUTING AND BIS

## Advisory Opinion # 2

- iii. Many computers in several locations and include data stored and shared by the users of the services for applications such as email, calendar, messaging and video
- iv. Service provider does not monitor or screen user-generated content stored and/or shared in the cloud, except when required to do so by law (subpoena); thru automatic tools such as spam-filtering or spell-checking; or with user consent (troubleshooting user's account)
- v. Data stored in the cloud may constitute “technology” under the EAR.

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 2

- **BIS Response to Question #1**
- **Service of providing computational capacity thru the cloud is not subject to the EAR, since the cloud computing service provider is not shipping or transmitting any commodity, software or technology subject to the EAR to the cloud computing service's users**

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 2

- **The cloud computing service provider is not an “exporter”**
- **Because the cloud computing service provider is not an “exporter”, it would NOT be making a deemed export if a foreign national network administrator/employee monitored or screened, as presented in the scenario, user-generated technology subject to the EAR**

# CLOUD COMPUTING AND BIS

## Advisory Opinion # 2

### **BIS added cautionary notes in AO #2**

- **AO # 2 addresses only the fact scenario as requester presented**
- **AO# 2 does not apply to release by the cloud computer service provider of technology subject to the EAR to its foreign national employees under other sets of facts –**
- **Such other release may constitute a deemed export or deemed reexport depending on the location and MAY be subject to licensing requirements**

# CLOUD COMPUTING AND BIS

## Advisory Opinions # 1 & 2

- **BIS AO # 1 & # 2 do NOT squarely address export control issues that arise from the service users' activities**
- **Example A: US-based user accesses its cloud service and performs a computational function with its own EAR-controlled technology or information, and a server or some software needed for the computation and provided thru the cloud is located in Elbonia**

# CLOUD COMPUTING AND BIS

## Advisory Opinions # 1 & 2

- **In Example A**, User has made an (unknowing) export to Elbonia for which a BIS license may have been required
- Accordingly, notwithstanding BIS AO # 1 & 2, users of cloud computing services need to evaluate their usage in light of their risk for inadvertently being an exporter of EAR-controlled technology and take reasonable precautions

# OBSERVATIONS AND RECOMMENDATIONS FOR CONSIDERATION



# **OBSERVATIONS FOR CLOUD SERVICE PROVIDERS**

- Determine whether your services and activities are addressed established by BIS AO # 1 & 2
- **Caution:** Provider may actually export its own technology or software that is subject to the EAR and thus may require an export license – e.g., to set up, maintain, and troubleshoot the service on overseas servers
- Determine of your customer users are involved with **ITAR-controlled tech data** transmissions and computations – if so, AO # 1&2 will NOT be relevant.



# **OBSERVATIONS FOR CLOUD SERVICE PROVIDERS**

- **Screen all customer-users against SDN and other prohibited parties lists**
- **Preclude access to service from OFAC sanctioned countries and blocked parties**
- **Be careful on terminating relationship and insure against tangible media return of cloud user's technology – approach like “routed transaction”**
- **Provide US-ONLY location and no foreign person employee cloud services as a possible option as may be requested by users, e.g. ITAR tech data involved**

# OBSERVATIONS FOR CLOUD USERS

- **Cloud computing usage requires export control compliance procedures and coverage in your export manual**
- **Export Compliance officer MUST clearly comprehend export control consequences if user places export-controlled tech data and/or technology and/or information in the cloud for operational or computational functions – i.e., exactly what will be uploaded or downloaded**

# OBSERVATIONS FOR CLOUD USERS

- **Users should scrutinize and closely read their cloud computing service provider’s contract and consider how, through/to whom, and physically where the user’s tech data and/or technology and/or information will be transmitted and stored**
  - **Where are cloud provider’s servers located?**
  - **Does cloud provider transfer data to servers in other countries during peak or off-times?**
  - **Will cloud provider employ foreign nationals to work on “cloud user’s account”?**

# OBSERVATIONS FOR CLOUD USERS

- **Users should consider contractual requirement that no non-US location for cloud server will be involved with user's account where user has ITAR-controlled tech data**
- **Users should consider contractual requirement that no non-expressly specified location for cloud server, etc will be involved for user's account for EAR-controlled technology [countries for which user clearly knows that its EAR-controlled technology is NLR to such countries]**

# OBSERVATIONS FOR CLOUD USERS

- **Seek contract language with provider that no unlicensed foreign national IT administrator and/or employee of service provider will access user's export-controlled tech data and/or technology and/or information**
- **Limit cloud usage to only data/software that are EAR 99**

# OBSERVATIONS FOR CLOUD USERS

- **Apply for Export License -**
- **Determine to or through or in which particular countries your tech data and/or technology and/or information may be transmitted and/or stored by the cloud computing service provider, and then apply for the relevant export or reexport licenses before using the cloud service**

# OBSERVATIONS FOR CLOUD USERS

- **Encrypting your data is irrelevant for export licensing analysis!**
- **No contractual indemnification language can or will ultimately shift the onus to cloud provider for all export control liability exposure nor protect the cloud user from liability for export control violations**

# CLOSING

- **Cloud computing presents complex export control challenges**
- **US export regulations as currently written actually do expose both users and service providers to possible export violations, e.g., unlicensed export, aiding/abetting unlicensed export; unlicensed defense service.**



# CLOSING

- **While BIS has provide 2 Advisory Opinions regarding EAR applicability to cloud computing service providers, DDTC and OFAC have not provided any public written guidance - thus providers are exposed to unlicensed activity under ITAR and OFAC as discussed**
- **Cloud computing service users must assume that their services that involve foreign-located servers, do constitute exports subject to licensing by the relevant export control agency**

# QUESTIONS



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