



Lawrence Livermore National Laboratory



# Open-source Information and Evaluation in IAEA Safeguards

**Jonathan Essner**

LLNL-INL Summer Safeguards Lecture Series

August 2009

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Lawrence Livermore National Laboratory, P. O. Box 808, Livermore, CA 94551  
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Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344

**LLNL-PRES-404510**

# Open-source information



- What is it?
- Who collects and uses it?
- Why is it important for safeguards?
- When and how does the IAEA collect it?
- Searching
- Exercise
- Discussion of Open Source Search Tools



# What is open-source information?



Open-source information is data that is available to anyone in the public domain that may exist as an electronic file (Internet, online video, etc.), a hardcopy document, (maps, books, etc.), or even an observation (satellite tracking, airline takeoffs and landings, etc.).

Perhaps a challenge to define but you know it when you see it!



# Sample open sources



- Newspapers
  - New York Times, Washington Times, Wall Street Journal, Los Angeles Times, Associated Press, Reuters, etc.
- Journals
  - International Security, Foreign Affairs, Foreign Policy, etc.
- Magazines
  - New Yorker, Der Spiegel, TIME, etc.
- Trade Publications
  - Bulletin of the Atomic Scientists, Nuclear Fuel, Nucleonics Week, etc.
- Websites
  - Nuclear Threat Initiative, Federation of American Scientists, GlobalSecurity.org
- Government
  - Congressional Research Service, Government Accountability Office, unclassified National Intelligence Estimates, policy statements, “unique” reports
- IAEA based
  - Travel reports, Technical Cooperation projects (completed, in progress, requested), International Nuclear Information System (INIS)



# Sample open-source providers



## General Collection Databases

- Factiva
- Lexis-Nexis
- Proquest
- Open Source Center (previously FBIS)

## Specialty Collection Databases

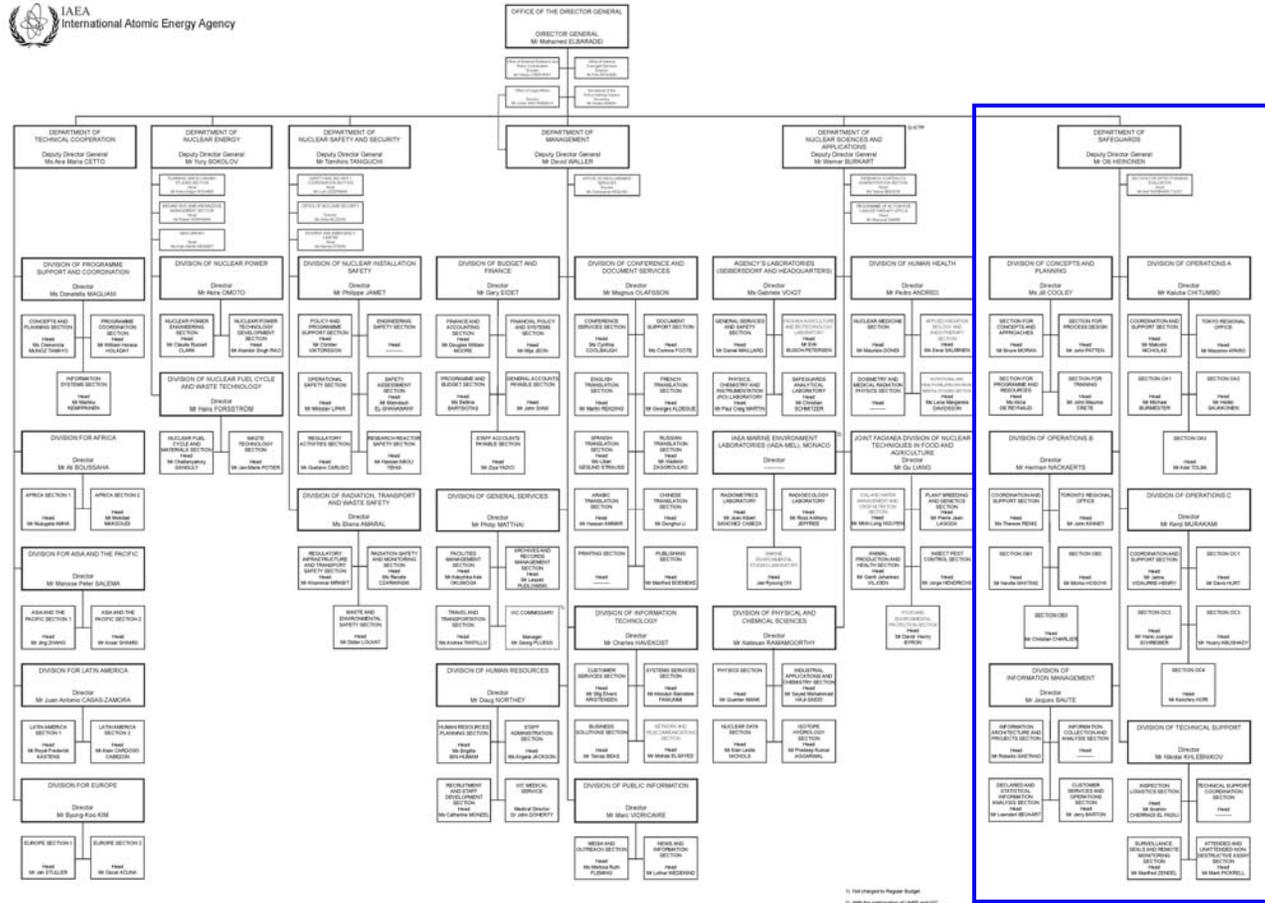
- Science Direct
- Kompass

## Specialty Sources

- Satellite Imagery (Digital Globe, GeoEye, GoogleEarth)
- Government



# Who uses open-source information?

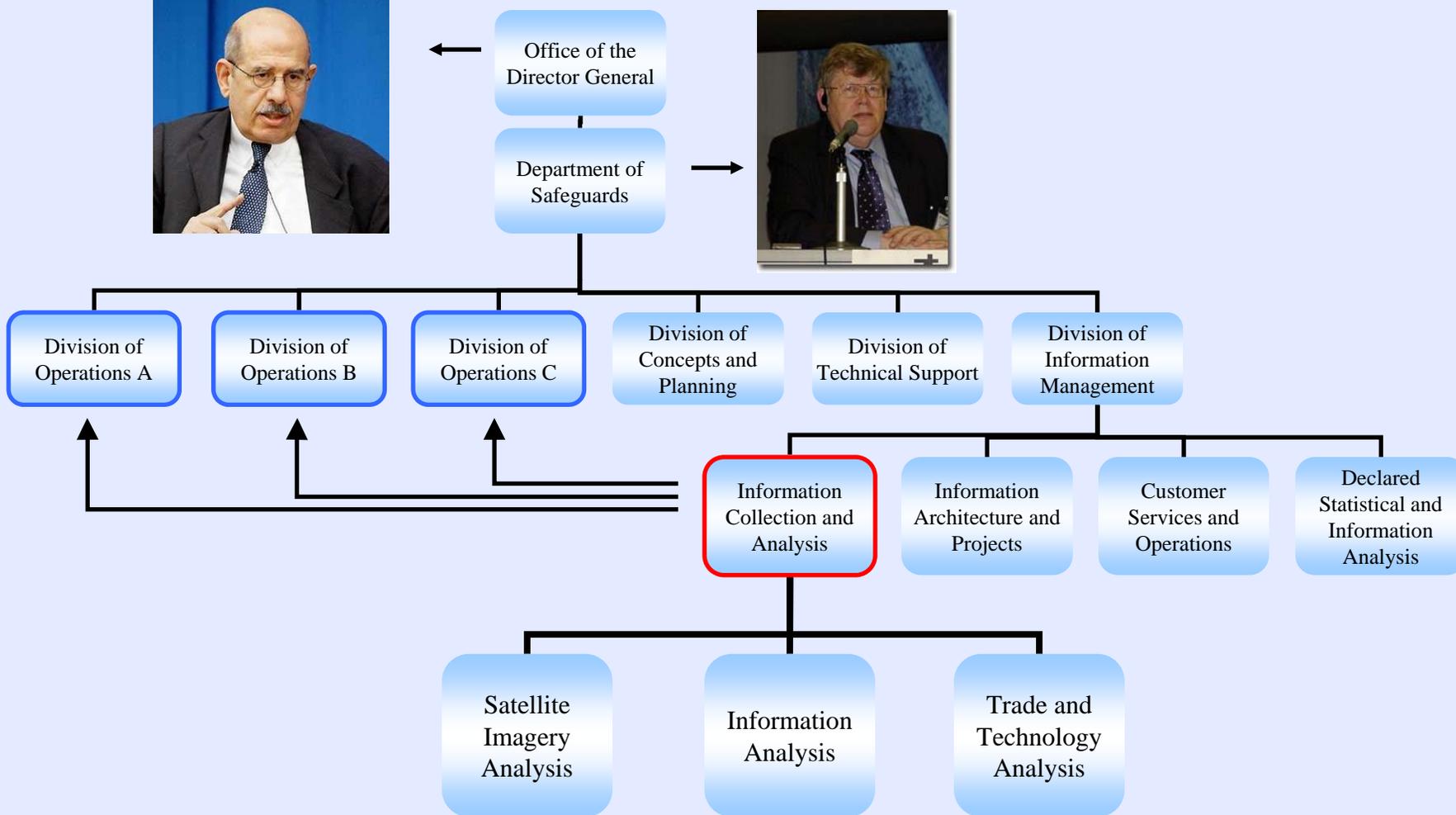


Date: 1 March 2008  
Please refer to the IAEA Website for the most up-to-date information.

1. Not subject to Request Review  
2. Not subject to Request Review  
3. The IAEA Safeguards Information System (ISIS) is a computerized system for the collection, storage, processing, and dissemination of information on nuclear fuel cycle activities. It is operated as a joint program by IAEA and the Agency's member states and is subject to the Agency's Information System Security Policy (ISSP) and the Agency's Information System Security Policy (ISSP) as approved by the Board of Governors.



# Who collects and uses open-source information?



# Why is open-source information important to safeguards?

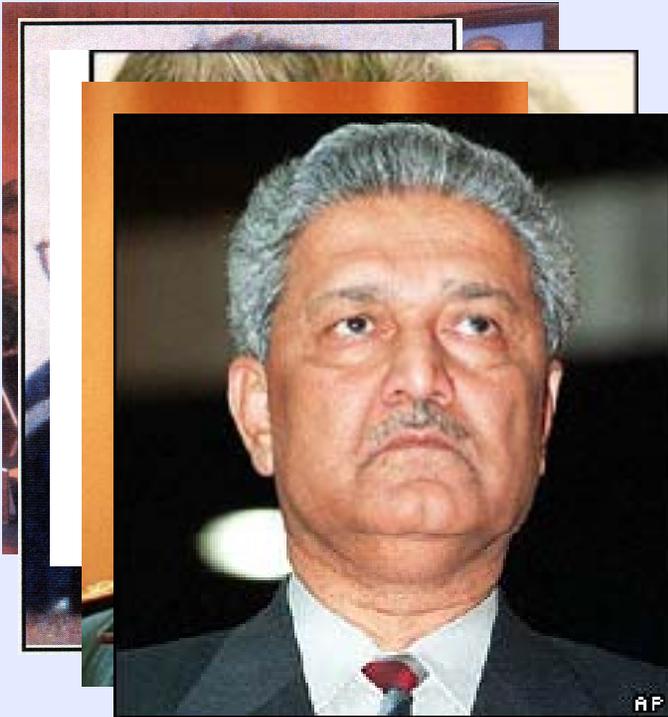


“[I]nformation analysis forms the core of strengthened safeguards. All of this new information has to be collected, processed, evaluated, and used by the Agency to draw the conclusion that there is no evidence of undeclared nuclear material or activities in that state, for each state with a Comprehensive Safeguards Agreement and Additional Protocol in force. This was, and remains, a challenging enterprise.”

*Kaluba Chitumbo, former Director of Safeguards Information Technology, current Director of Safeguards Operations A*



# Why is open-source information important to safeguards?



"When you see things being designed in one country, manufactured in two or three others, shipped to a fourth, redirected to a fifth, that means there's lots of offices all over the world," Dr. ElBaradei said. "The sophistication of the process, frankly, has surpassed my expectations."

Safeguards-related follow-up – interviews, site inspections, etc. – linked to the covert procurement network may have taken place in:

Germany	South Africa
Iran	Spain
Italy	Switzerland
Liechtenstein	Turkey
Malaysia	UAE
Mozambique	Many more...



# When and how does the IAEA collect open-source information?



The IAEA acquires open-source information through three means:

- Daily collection
  - Scour Internet and multiple databases
  - Hits come from multiple source-types, mostly news, magazines, journals
- Periodic (annual, bi-annual), state-specific collection
  - Examine nuclear-related, state-level institutions (e.g. review Jordan Atomic Energy Commission website)
- Ad-hoc, topic-specific collection
  - React to ad-hoc situations such as revelations of safeguards anomalies in South Korea and Egypt in 2004/2005



# Source Accessibility and Value



Open sources have different levels of accessibility, ease of comprehension, credibility, etc.

**BEWARE** of the low-hanging fruit!



# General Sources

The Boston Globe

THE  INDEPENDENT

REUTERS

The Washington Post

INSIDE: UNSTABLE PAKISTAN, A 10-PAGE SPECIAL REPORT

The Economist

General Motors, Renault and Nissan  
Last chance for the Doha trade round  
The pain in Gaza  
Internet advertising gets smarter  
Germany: America's new friend

JULY 8TH - 14TH 2006

www.economist.com



Rocket man



The Economist

Gazprom, Bolivia and the energy wars  
Is Turkey slipping backwards?  
Outsourcing: China takes on India  
The real map of London  
Farewell, J.K. Galbraith

Unstoppable?  
Iran's nuclear ambitions



EL PAÍS.com  
EDICIÓN GLOBAL

THE WALL STREET JOURNAL.



# Nuclear-specific Sources



**platts** www.platts.com

## NuclearFuel

Volume 32 / Number 20 / December 17, 2007

**US officials provide details on plutonium disposition deal with Russia**

A recently concluded Russian plutonium shipper US nonproliferation goals a carefully balanced set of that allow Russia to use for disposition and reprocess fuel only under certain conditions, US officials said. In e-mails and interviews DOE's National Nuclear Security Administration announced November 19, US officials described a fresh calibration. In the announcement...

**NRG to study po**

The Nuclear Research Group, NRG, said this may study the feasibility of enriched uranium in fuel elements-99 targets the comp in the High Flux Reactor 1 Netherlands. According to NRG, the lead to qualification trial Mx-99 targets within a few large-scale production of LEU within a decade, full

**Spot U prices w**

The spot price of uranium a bit because of very demand. The market is "dead," said one market analyst that the only activity some small loans and one. In Platts opinion, base stores with market sources transactions over the next likely to be concluded with of \$80-\$95/lb U3O8, until the previous assessment.

The McGraw-Hill Companies

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**platts** www.platts.com

## Nucleonics Week

Volume 48 / Number 11 / March 15, 2007

**NRC commissioners give approval for first-ever early site permit**

The NRC commissioners gave approval last week for an early site permit for Exelon Generation Co.'s Clinton, making the company the first in line to receive an ESP under the agency's new plant licensing process. The NRC staff has 10 days from the commissioners' March 8 vote to issue the actual permit. One NRC official said the permit is expected to be issued March 15. The ESP, which resolves certain site suitability, environmental and emergency planning issues, would give Exelon the right to reserve the Clinton site for up to 20 years for possible construction of a new nuclear plant. Because an ESP is considered a partial construction permit, Exelon could undertake limited construction activities once it receives the permit. NRC is in the process of finalizing a rule that would resolve which preconstruction activities, mostly site-preparation work such as clearing land and building roads, can be done without prior agency approval. But no work to safety-related buildings can start without the licensee first obtaining a construction permit or combined construction permit/operating license, or CCL. Exelon has said it currently has no plans to seek a CCL for a new reactor at the Clinton site, where it operates a 1,077-MW BWR. However, it announced in late September that it would pursue possible construction of a new plant at an unspecified site in Texas.

(Continued on page 8)

**RWE to weigh in with Merkel over BMU rejection of Biblis-A transfer**

Biblis-A owner RWE will confer with cabinet officials and Chancellor Angela Merkel during the next four weeks to convince her that lead regulator Sigma cabinet had no legal grounds for announcing March 9 that he would block RWE's request to extend Biblis-A's lifetime, sources close to RWE top management said March 13. Gabriel, a Social Democrat, or SPD, politician and head of the Federal Ministry of Environment & Nuclear Safety, or BMU, confirmed reports the week before (ENR 3/6 March 5) that he had decided to oppose RWE's petition to transfer 30 billion kilowatt-hours from the closed Muelheim-Kaerlich PWR to Biblis-A. That would allow Germany's longest-serving power reactor to continue operating beyond early 2009 and after the next anticipated federal election.

(Continued on page 9)

**TVA mulls completion of Watts Bar-2**

Completing Watts Bar-2 "looks like it could be a good choice" for the Tennessee Valley Authority, the federal utility's Jack Bailey told NRC staffers during a March 12 meeting. Bailey noted that the cost estimates of finishing the unit versus building a new reactor "are not that far apart." TVA has estimated finishing Watts Bar-2 would likely cost \$2 billion to \$3 billion. However, Bailey listed several phases for completing the unit, including that TVA "already knows what the project looks like" because it has the same type reactor already operating at the site, Watts Bar-1, a 1,210-MW PWR, began commercial operation in 1996. TVA stopped construction on Watts Bar-2 in 1984 as it scaled back its nuclear construction program. TVA estimates Watts Bar-2 is about 60% complete, but expects a detailed scoping, estimating and planning cost study to provide a more definitive figure. TVA

**Inside This Issue**

- Clinton-3 line to be repaired, not on critical path. TVA says 3
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- NRC outlines inspections planned at Palo Verde after divergences 5
- CRB critics of legal standards on rad protection recommendations 6
- Safety standards commissioners object to BMU regulatory update 10

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SECURITY, SCIENCE & SURVIVAL

## Bulletin of the Atomic Scientists

www.bulletinofatomicscientists.org

Our Afghan lie  
Smuggling makes  
When satellites  
attack

# NUCLEAR 9/11

Will it happen?

SECURITY, SCIENCE & SURVIVAL

## Bulletin of the Atomic Scientists

www.bulletinofatomicscientists.org

The perils of preemption  
The real oil weapons  
A new tool  
against terrorists

# When could Iran get the Bomb?

SECURITY, SCIENCE & SURVIVAL

## Bulletin of the Atomic Scientists

www.bulletinofatomicscientists.org

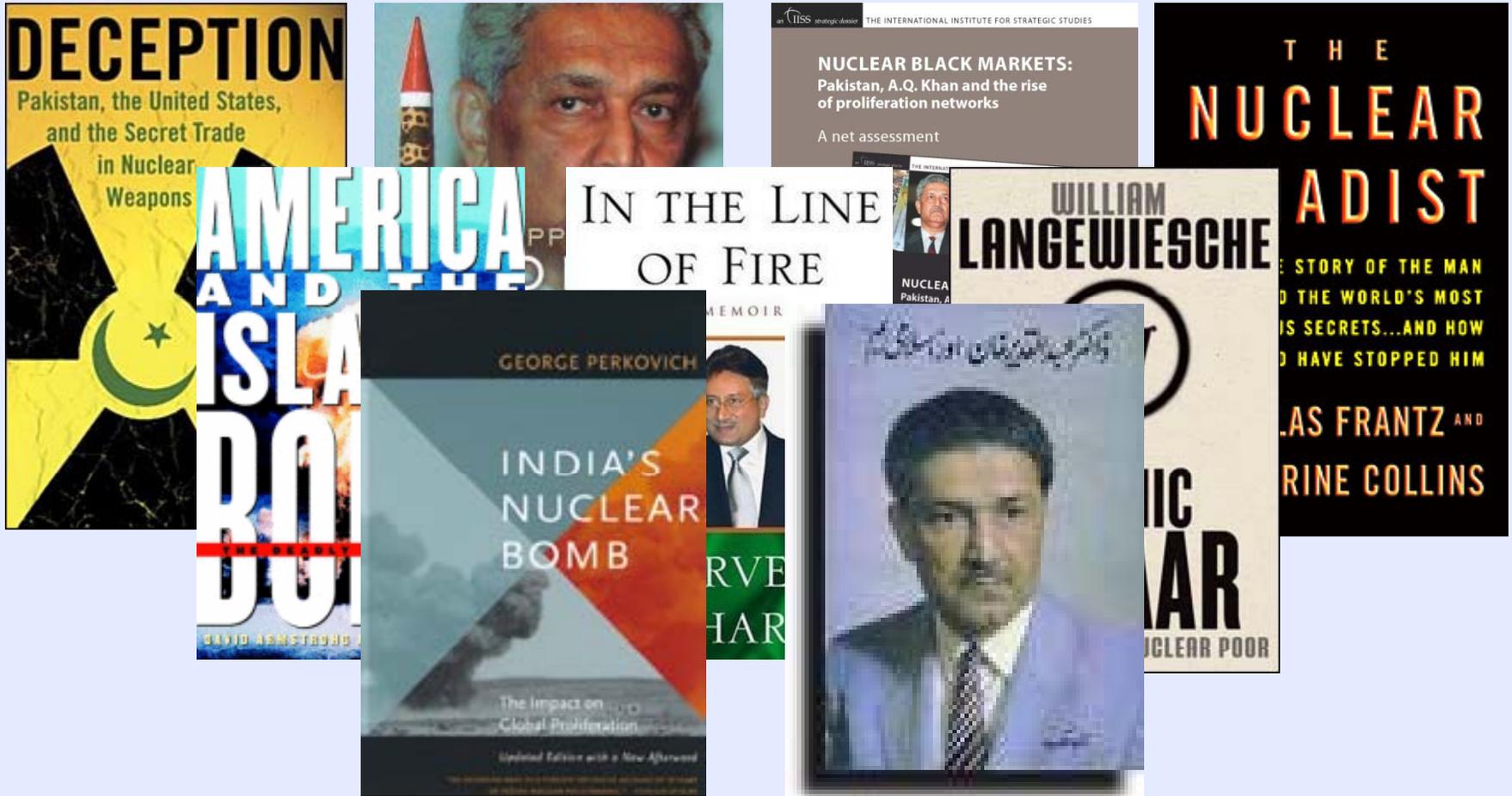
DECLASSIFIED  
JFK's nuclear conscience  
Nixon, Israel, and the Bomb

# MOUNTAIN OF WASTE

The United States has  
70,000 tons of nuclear waste  
(and nowhere to put it)



# Detailed Sources



# Event- or issue-specific sources

## PRESS RELEASE BY INSPECTOR GENERAL OF POLICE IN RELATION TO INVESTIGATION ON THE ALLEGED PRODUCTION OF COMPONENTS FOR LIBYA'S URANIUM ENRICHMENT PROGRAMME

<p>Polis Diraja Malaysia Page 1 of 11</p> <p><b>PRESS RELEASE BY INSPECTOR GENERAL OF POLICE IN RELATION TO INVESTIGATION ON THE ALLEGED PRODUCTION OF COMPONENTS FOR LIBYA'S URANIUM ENRICHMENT PROGRAMME.</b></p> <p><b>INTRODUCTION</b></p> <p>On the evening of 10 Nov 2003, two intelligence representatives from the United States and Britain, i.e. the CIA and the MI6, met the Director of the Special Branch, Bukit Aman. The focus of their discussion was the ongoing investigation related to the international network that is suspected of being involved in the transfer of nuclear technology to third countries. Both the representatives asked for the co-operation of the Special Branch to prevent the spread of nuclear technology. They also provided information relevant for joint action.</p> <p><b>INFORMATION</b></p> <p>2. Among the informations passed are the following:</p> <p>2.1 <b>Involvement of a nuclear scientist in PAKISTAN</b></p> <p>Alleged that a Pakistani nuclear arms expert was involved in the "onward proliferation of Pakistani nuclear technology to third countries, notably LIBYA."</p> <p>2.2 <b>ISA TAHIR</b></p> <p>Alleged that ISA TAHIR, a SRI LANKAN businessman based in DUBAI was a trusted and close confidante of the arms expert and was actively involved in supplying centrifuge components for LIBYA's uranium-enrichment programme; and</p> <p>2.3 <b>SCOMI PRECISION ENGINEERING SDN BHD (SCOPE)</b></p> <p>Alleged that ISA TAHIR, who was involved in the business of SCOPE had used the company to produce components for the centrifuge unit for the uranium enrichment programme. However, investigations have revealed that the components, on their own, cannot form a complete centrifuge unit. In this context, it has to be noted that SCOPE is a subsidiary of SCOMI GROUP BHD, i.e. a company involved in the petroleum services industry. As a subsidiary, SCOPE is also involved in precision engineering services which involve the production of components for a variety of equipments including parts for cars, petroleum and gas.</p> <p>3. In relation to this, the Special Branch was also informed that on 4 Oct 2003, a ship named HBC China, owned by a GERMAN company, was examined in the port of Taranto, ITALY, where 5 containers bound for LIBYA were confiscated because they were believed to contain components related to the Libyan uranium enrichment programme. The components were said to have been packed in wooden boxes with the SCOPE logo on them. With this development a request was made to assist with the investigations related to the activities of ISA TAHIR and his connection with the Pakistani scientist in view of the "intense interest in this matter at the highest levels of the USA/UK governments".</p> <p>4. Following this development, the police launched an investigation to find out the real</p> <p>file://C:/A/LLNL/AQK/Malaysia Police Report/Polis Diraja Malaysia.htm 5/20/2008</p>	<p>Page 2 of 11</p> <p>Now 2003. He the Inspector-ation had been</p> <p>tion the above-om in supplying FA's uranium-</p> <p>years old and a brother own a In 1998, ISA AYUSIA, SMID and IT fields, only returns to Hias.</p> <p>SMID and in the eg equipment is-nted with the son from other components on</p> <p>MALAYSIA's proliferation. In agency (S.M.A.), and regulations ensure that the sets were given tal help of the an officer with et will also be equipes outside</p> <p>carried out in a be components. be for uranium e; who had had , developing its to supplied, the wore similar to rial use.</p> <p>nuclear expert two containers involvement of many in IRAN, o about USD\$3 t two briefcases ms expert each</p> <p>Page 3 of 11</p>
<p>file://C:/A/LLNL/AQK/Malaysia Police Report/Polis Diraja Malaysia.htm 5/20/2008</p>	<p>file://C:/A/LLNL/AQK/Malaysia Police Report/Polis Diraja Malaysia.htm 5/20/2008</p>
<p>file://C:/A/LLNL/AQK/Malaysia Police Report/Polis Diraja Malaysia.htm 5/20/2008</p>	<p>file://C:/A/LLNL/AQK/Malaysia Police Report/Polis Diraja Malaysia.htm 5/20/2008</p>

- Buhary Seyed Abu Tahir
- SCOMI GROUP BHD/SCOPE
- Mohamad Matuq Mohamad
- Peter Griffin/Paul Griffin
- Heinz Mebus
- Gotthard Lerch
- "Machine Shop 1001"
- Gunas Jireh
- Selim Alguadis
- More...



# Scientific papers

- Bhatti, J.A., Aijazi, M.K., Khan, A.Q., “Design characteristics of **molecular drag pumps**,” (2000) Vacuum, 60 (1-2), pp. 213-219.
- Ahmed M., Ali A., Hasnain S.K., Hashmi F.H., Khan A.Q., “Magnetic properties of **maraging steel** in relation to deformation and structural phase transformations,” (1994) Acta metallurgica et materialia, 42 (3), pp. 631-638.
- F. Habiby, T. N. Siddiqui, H. Hussain, M. A. Khan, A. ul Haq, A. Q. Khan, “Machine-induced phase transformation in a **maraging steel**,” Materials Science and Engineering A, Volume 159, Issue 2, 30 December 1992, Pages 261-265.
- F. Habiby, A. ul Haq, A. Q. Khan, “Influence of austenite on the coercive force, electrical resistivity and hardness of 18% Ni **maraging steels**,” Materials & Design, Volume 13, Issue 5, 1992, Pages 259-264.
- M. Alam, M.A. Atta, J.A. Mirza and A.Q. Khan, “Flow induced vibrations in **gas tube assembly of centrifuge**,” Journal of Nuclear Science Technology. 23 (1986) (9), pp. 819-827.



# Source and Information Challenges and Pitfalls

- Beware of source bias (example)
- Read sources carefully, understand context (example)
- Avoid judgments based on title (example)
- Cite the correct source (example)
- Recognize Primary vs. Secondary Source
  - “According to an article published by William Langweische in the Atlantic...”
- Be wary of state-run media
  - Korean Central News Agency
  - Islamic Republic News Agency
- Avoid going too far down rabbit holes



# Source and Information Challenges and Pitfalls, cont.

- Keep reference to editorials to minimum
- Pay attention to word choice/tense
  - “IAEA to question A.Q. Khan”
- Be careful with sources not written by native language writers/speakers
- Note the date and consider the context at the time
- Do not misinterpret
  - “Iran Signs Additional Protocol on Nuclear Safeguards”
  - “IAEA approves Bangladesh nuclear power plant”



# Sankei Shimbun. Source Bias?



- North Korea helped Libya develop weapons of mass destruction including technology to build Scud B and Scud C missiles. Iran was also involved. (January 6, 2004)
- North Korea has made a government-level effort to obtain materials from Japan for its nuclear program. (January 18, 2004)
- North Korea and Iran are working together to build an underground facility to manufacture centrifuges near Kusong. (March 10, 2004)
- North Korea and Iran are preparing to carry out joint detonator tests and irradiation procedures as part of a joint nuclear development plan. (June 15, 2004)
- North Korea exported fluorine gas to Iran. (November 7, 2004)
- North Korea has shared nuclear technology with Iran at an undeclared facility near Esfahan. (June 9, 2005)
- North Korea obtained cruise missile technology from Iran, which may be related to Iran's acquisition of several Kh-55 ALCMs. (June 26, 2005)
- North Korea is providing nuclear warhead information to an unnamed Middle Eastern country. (September 15, 2005)



# Israel, Syria and the BOE



Paragraph 6:

“One Bush administration official said Israel had recently carried out reconnaissance flights over Syria, taking pictures of possible **nuclear** installations that Israeli officials believed might have been supplied with material from North Korea. The administration official said Israeli officials believed that North Korea might be unloading some of its **nuclear** material on Syria.”

U.S. Confirms Israeli Strikes Hit Syrian Target Last Week - New York Times

Page 1 of 2

The New York Times  
nytimes.com

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Page 2 of 2

September 12, 2007

## U.S. Confirms Israeli Strikes Hit Syrian Target Last Week

By MARK MAZZETTI and HELENE COOPER

WASHINGTON, Sept. 11 — After days of silence from the Israeli government, American officials confirmed Tuesday that Israeli warplanes launched airstrikes inside Syria last week, the first such attack since 2003.

A Defense Department official said Israeli jets had struck at least one target in northeastern Syria last Thursday, but the official said it was still unclear exactly what the jets hit and the extent of the bombing damage.

Syria has lodged a protest at the [United Nations](#) in response to the airstrike, accusing [Israel](#) of “flagrant violation” of its airspace. But Israel’s government has repeatedly declined to comment on the matter.

Officials in Washington said that the most likely targets of the raid were weapons caches that Israel’s government believes Iran has been sending the Lebanese militant group [Hezbollah](#) through Syria. Iran and Syria are Hezbollah’s primary benefactors, and American intelligence officials say a steady flow of munitions from Iran runs through Syria and into Lebanon.

In the summer of 2006, during fighting between Israeli and Hezbollah forces, the militant group fired hundreds of missiles into Israel, surprising Israel with the extent and sophistication of its arsenal. Israel has tried repeatedly to get the United Nations to prevent the arms shipments across the Syria-Lebanon border.

One Bush administration official said Israel had recently carried out reconnaissance flights over Syria, taking pictures of possible nuclear installations that Israeli officials believed might have been supplied with material from North Korea. The administration official said Israeli officials believed that North Korea might be unloading some of its nuclear material on Syria.

“The Israelis think North Korea is selling to Iran and Syria what little they have left,” the official said. He said it was unclear whether the Israeli strike had produced any evidence that might validate that belief.

The officials spoke on condition of anonymity because they were discussing a military action by another government.

In a letter circulated to members of the Security Council on Tuesday, Syria’s ambassador to the United Nations, Bashar Jaafari, said Israel dropped munitions though they did not cause any “material damage.”

Syria made its protest via Qatar, the Arab representative on the Security Council, United Nations officials said. Security Council representatives discussed the issue on Tuesday, but did not come to any conclusions.

Neither Israel nor the United States has spoken publicly on the airstrikes. The State Department spokesman,

<http://www.nytimes.com/2007/09/12/world/middleeast/12syria.html?pagewanted=print>

6/2/2008

<http://www.nytimes.com/2007/09/12/world/middleeast/12syria.html?pagewanted=print>

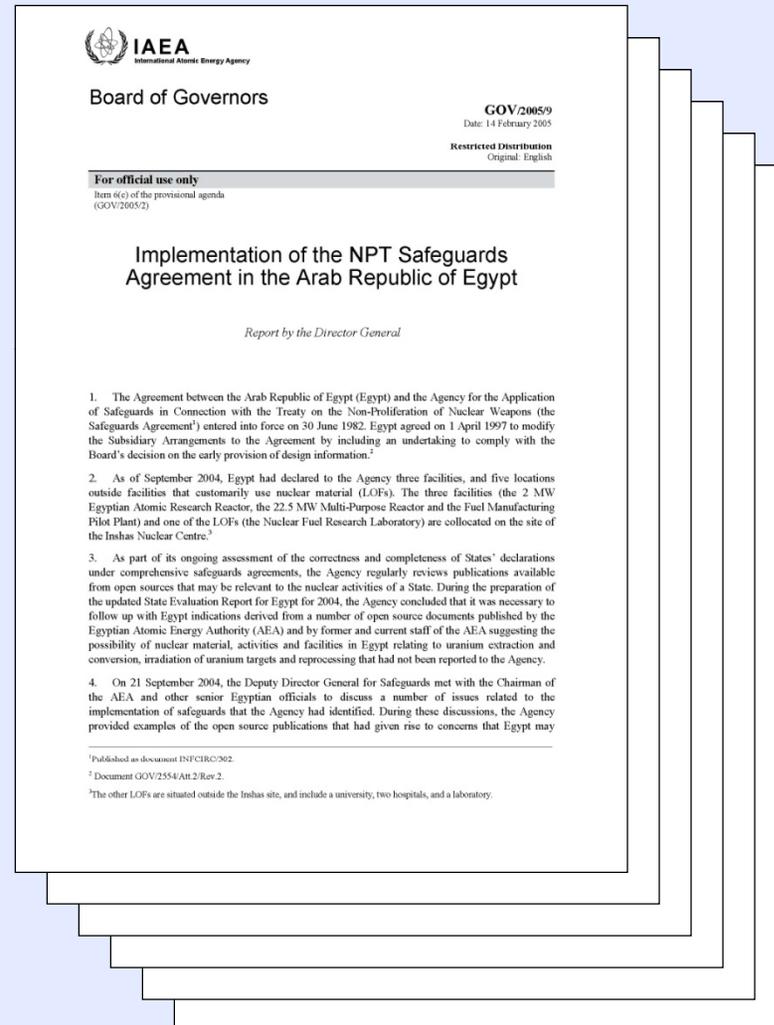
6/2/2008

# Judgments Based on Titles

## IAEA Report on Egypt: February 14, 2005

- “IAEA Report on Egypt’s Nuclear Activities Damning”
- “IAEA Report Chides Egypt”
- “Nuclear Agency Report Praises Egypt”\*
- “IAEA: Egypt Up Front about Atomic Arms”\*

\*Same report!



# Cite the correct source

U.S. tells Syria not to restrict U.N. nuclear probe

Page 1 of 2

washingtonpost.com

## U.S. tells Syria not to restrict U.N. nuclear probe

By Mark Heinrich  
Reuters  
Wednesday, June 4, 2008; 7:55 AM

VIENNA (Reuters) - The United States on Wednesday demanded Syria give free rein to U.N. nuclear investigators after diplomats said Damascus would bar access to some sites Washington believes are linked to a secret atomic reactor.

The United States says Syria was close to completing a reactor with North Korean help that could have yielded plutonium for nuclear arms before it was bombed by Israel last September.

The U.N. nuclear watchdog began an inquiry after receiving U.S. intelligence documentation in April.

International Atomic Energy Agency director Mohamed ElBaradei said on Monday that Syria, which had not responded to IAEA requests for explanations since the bombing, would allow in United Nations inspectors on June 22-24 to pursue the inquiry.

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# Searching



**FIND:** Abdul Qadeer Khan or A.Q. Khan



# Search Terms



Abd Al-Qadir Khan , Abdel Kader Khan, Abdel Qadeer Khan , Abdel Qader Khan, Ab-del-Qadeer Khan, Abdoul Qadeer Khan , Abdoul Quadeer Khan, Abdul Kadeer Khan, Abdul Kader Khan , Abdul Kadir Khan , Abdul Qadeer , Abdul Qadeer Kahn , Abdul Qadeer Khan, Abdul Qadir Khan , Abdul Quadeer Khan, Abdul Quadir Khan, Abdul Quader Khan, AQ Khan, A.Q. Khan, A Q Khan, عبد القدير خان (ar), عبدالغدير خان (fa), عبدالقدير خان (fa),



# Search String



(Abd Al-Qadir Khan or Abdol Qadir Khan or Abdel Kader Khan or Abdel Qadeer Khan or Abdel Qader Khan or Ab-del-Qadeer Khan or Abdoul Qadeer Khan or Abdul Kadeer Khan or Abdul Kader Khan or Abdul Kadir Khan or Abdul Qadeer or Abdul Qadeer Kahn or Abdul Qadeer Khan or Abdul Qadir Khan or Abdul Quader Khan or Abdul Quadeer Khan or AQ Khan or A.Q. Khan or A Q Khan or Qadeer Khan or Qadir Khan or Dr. Qadir or Doctor Qadir or Dr. Qadeer or Doctor Qadeer or Dr. Kader or Doctor Kader or Dr. Kadeer or Doctor Kadeer or Dr. Kadir or Doctor Kadir)



# “Nuclear” Search String



uranium or plutonium or radioactiv\* or radioisotop\* or  
(nuclear same prolifera\*) or non?proliferation or  
counter?proliferation or ((nuclear or atomic) near5 (fuel\*  
or weapon\* or warhead\* or reactor\* or waste or power or  
energy or cooperation or deal or transfer)) or deuterium  
or tritium or (heavy water and nuclear) or thorium or  
americium

Wildcards:

? means only one character

\* means any number of characters



# Open-source Information



- Open-source information is examined for credibility, value, relevance, timeliness, etc.
- It is analyzed, compared, contrasted, dissected and scrutinized many different ways by several analysts.
- Open-source information is not examined in a vacuum; its value is often based on how it fits with or next to other pieces of information.
- Open-source information is used to piece together a nuclear profile of the state (the SER):
  - Nonproliferation commitments
  - Safeguards undertakings
  - Nuclear-fuel cycle
  - Imports and exports
  - Potential proliferation pathways



# Challenges for the Safeguards Analyst

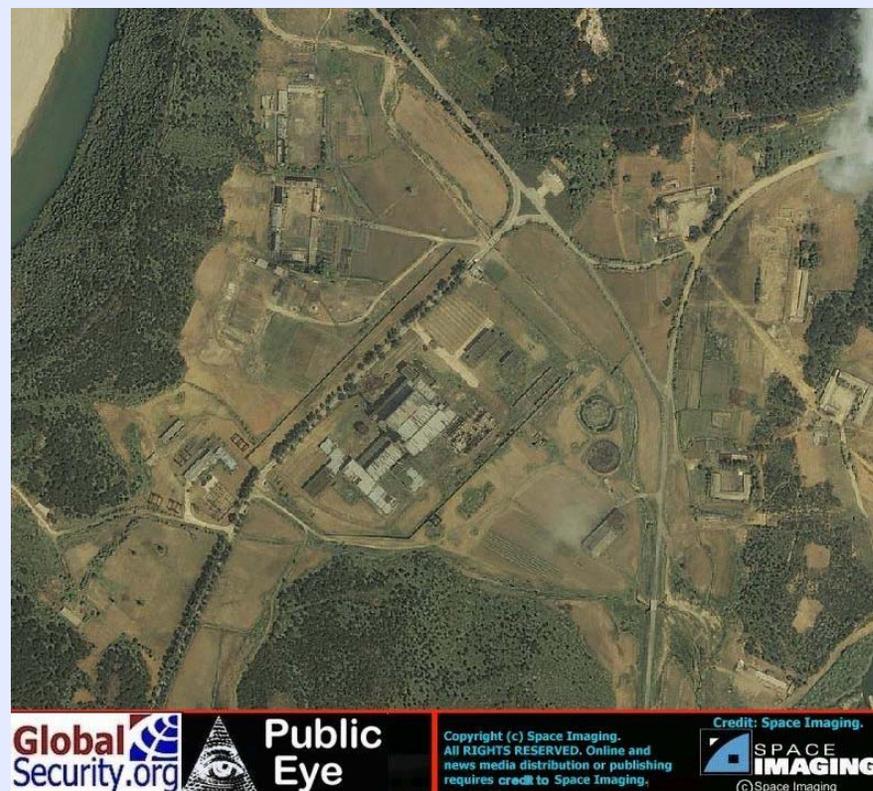


- Distinguishing sound sources from biased sources
- Accessing information in foreign languages
- Understanding technical issues
- Managing increasing volume of sources and text
  - DPRK, Iran coverage
  - Nuclear renaissance
  - Uranium boom
- Evaluating new media types
  - Blogs, online video, podcasts, wikis
- Synthesizing large amounts of data across various source-types



# A Valuable Lesson

Understand what you know...  
and what you **do not** know.



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# Search Tools



## Google (split into three as Google limits to 32 words)

1. "Abd Al-Qadir Khan" OR "Abdol Qadir Khan" OR "Abdel Kader Khan" OR "Abdel Qadeer Khan" OR "Abdel Qader Khan" OR "Ab-del-Qadeer Khan" OR "Abdoul Qadeer Khan" OR "Abdul Kadeer Khan"
2. "Abdul Kader Khan" OR "Abdul Kadir Khan" OR "Abdul Qadeer" OR "Abdul Qadeer Kahn" OR "Abdul Qadeer Khan" OR "Abdul Qadir Khan" OR "Qadeer Khan" OR "Qadir Khan" OR "Dr. Qadir"
3. "Doctor Qadir" OR "Dr. Qadeer" OR "Doctor Qadeer" OR "Dr. Kader" OR "Doctor Kader" OR "Dr. Kadeer" OR "Doctor Kadeer" OR "Dr. Kadir" OR "Doctor Kadir"



# Adobe Acrobat



- PDF an entire website (up to thousands of pages)
- Search website for keywords
- Example ([www.krl.com.pk](http://www.krl.com.pk))



# Teleport Pro



- Download all or part of a website to your computer, enabling you to browse the site directly from your hard disk at much greater speeds than if you were to browse the site online
- Create an exact duplicate, or *mirror* of a website, complete with subdirectory structure and all required files
- Search a website for files of a certain type and size
- Download a list of files at known addresses
- Explore every website linked from a central website
- Search a website for keywords
- Make a list of all pages and files on a website

2 examples:

- Bikar Metal ([www.bikar.com](http://www.bikar.com))
- PDF Extraction ([www.vertic.org/trustandverify.html](http://www.vertic.org/trustandverify.html))



# Copernic Tracker



- Monitor Web site changes for text changes, new images, and more
- Receive update alerts by email, on your desktop, and even on your cell phone
- View updated pages with changes highlighted
- Schedule monitoring to run daily, weekly or even up to the minute
- Watch for specific keywords on pages
- Archive different versions of tracked pages
- Track any page you browse with a single click

The screenshot displays the Copernic Tracker application window. The main area shows a list of tracked tasks with columns for task name, URL, last checked time, schedule, and last changed time. The tasks listed are:

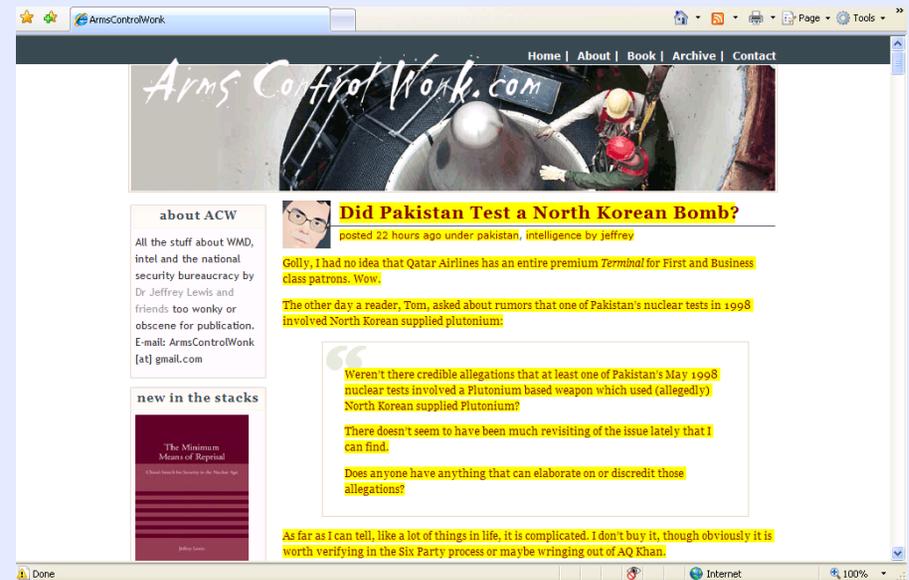
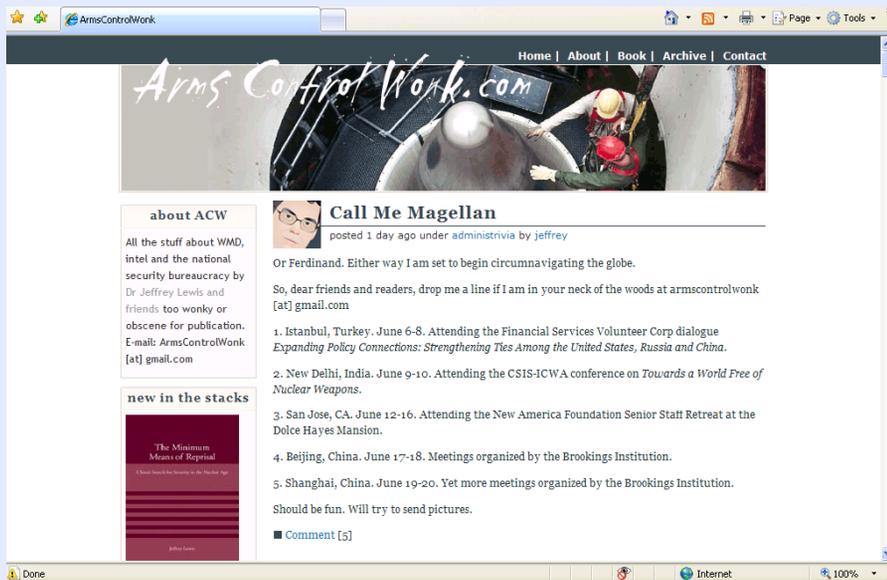
Task Name	URL	Last Checked	Schedule	Last Changed
ArmsControlWork	http://www.armscontrolwork.com	6/9/2008 8:16:54 AM	On a Daily Basis	6/9/2008 8:16:55 AM
IAEA Bulletin	http://www.iaea.org/Publications/Magazines/Bulletin/	6/9/2008 8:17:08 AM	On a Daily Basis	6/6/2008 2:35:11 PM
Nuclear Information: World Nuclear Association	http://world-nuclear.org/info/info.html	6/9/2008 8:52:45 AM	On a Daily Basis	6/9/2008 8:17:07 AM
Verification, Implementation and Compliance	http://verificationthoughts.blogspot.com/index.html	6/9/2008 8:16:47 AM	On a Daily Basis	6/6/2008 3:14:56 PM
VERTIC: Trust and Verify	http://www.vertic.org/trustandverify.html	6/9/2008 8:16:24 AM	On a Daily Basis	6/6/2008 3:13:54 PM

The 'Preview' section shows the content of the selected task, 'Trust & Verify'. It includes a navigation menu, a title, a subscription link, and two issue summaries:

- Issue number 122, October 2005-February 2006**: John Carlson examines the role that bilateral nuclear safeguards can play in providing non-proliferation assurance, while Matt Peterson reviews the work of the Aceh Monitoring Mission and explores the EU's latest approach to monitoring peace agreements. Plus Verification Watch and VERTIC News and Events.
- Issue number 121, July-September 2005**: Sean West examines some of the challenges to CTBT entry into force, while Yana Feldman and Beth Nikitin explore Saudi Arabia's Small Quantities Protocol. Plus Verification Watch, Science and Technology Scan, Peace Missions Monitor and VERTIC News and Events.



# Copernic Tracker



**Example!**

[http://recruitment.iaea.org/phf/p\\_vacancies.asp](http://recruitment.iaea.org/phf/p_vacancies.asp)

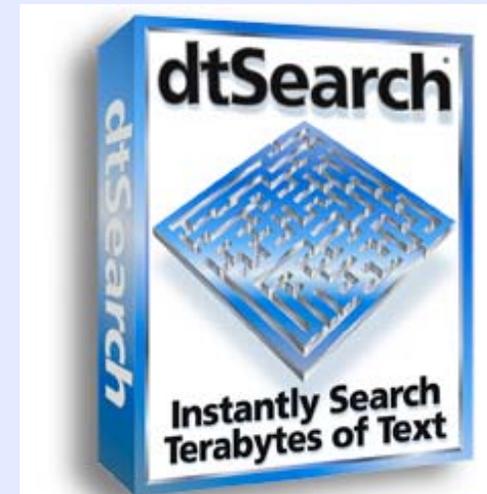


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US  
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Record expires on 16-Feb-2010.  
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NS2.NET-MASTER.COM 216.59.156.11



# Thank You

