

CORE[®]

Integrated Life-Cycle Knowledge Management and Applications to Intelligence Analysis

Vitech Corporation

2070 Chain Bridge, Suite 320
Vienna, VA 22182-2536
Phone: 703.883.2270

FAX: 703.883.1860
E-mail: info@vitechcorp.com
Web: www.vitechcorp.com

The Three Databases (Source Material)

- 1. Terrorist Pilot Training**
(Washington Post)
- 2. WTC Terrorist Cell Activities**
(Washington Post)
- 3. Osama bin Laden: Financial Support Networks** (Treasury Department Congressional Testimony)

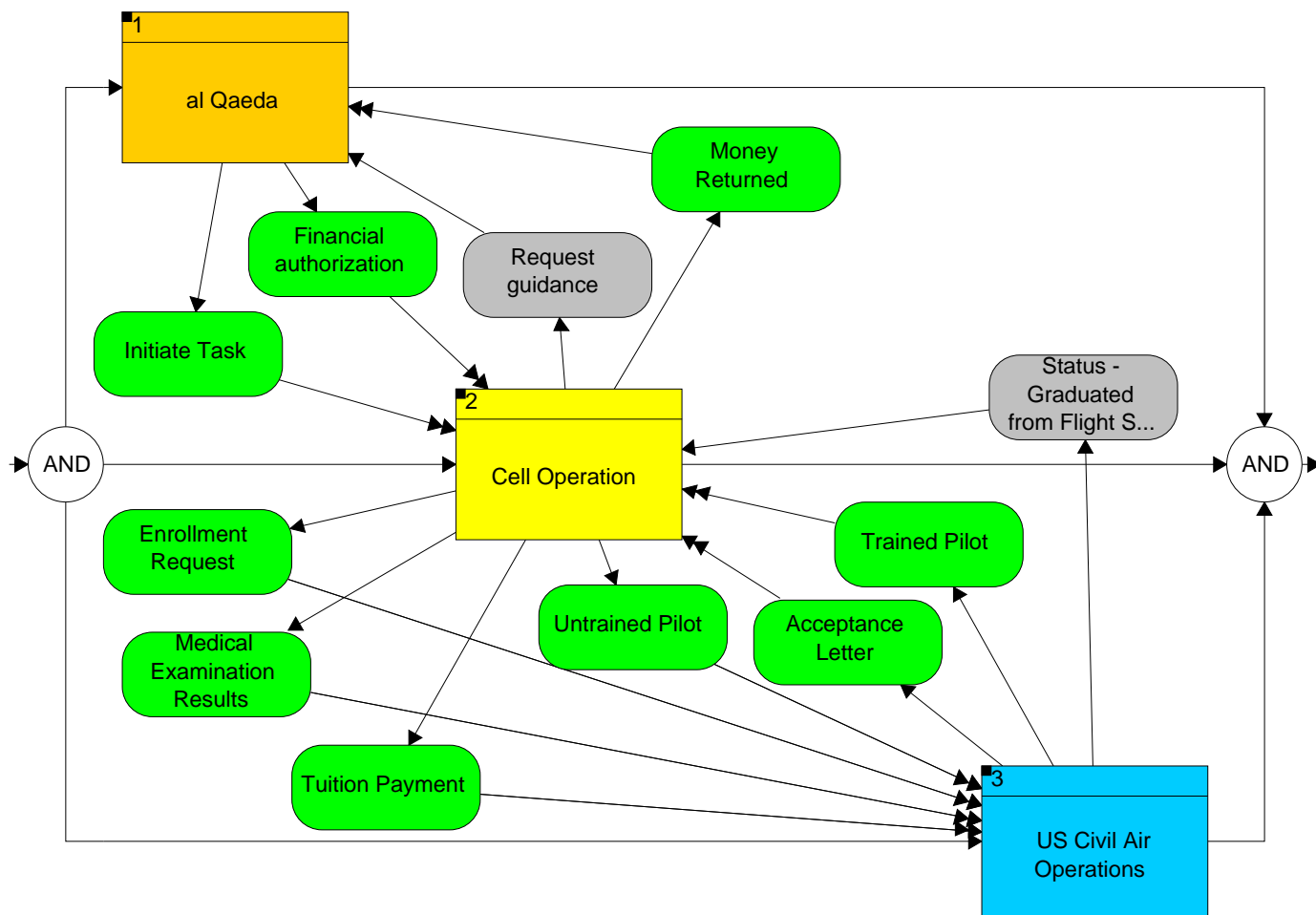
Analysis to a Purpose !

- **Analysis is about predicting the future – not documenting the past.**
- **How do we do this?**
 - **Recognize that a target may be viewed as a dynamic system**
 - **Systems may be analyzed statically or dynamically**
 - **System functions change slowly with time while physical elements may change dramatically**
 - **Systems need to be represented as separate functional and physical models.**
- **The model provides evidence of how well the target is understood.**
- **Total analysis is never completed.**

Views From the Terrorist Training Data

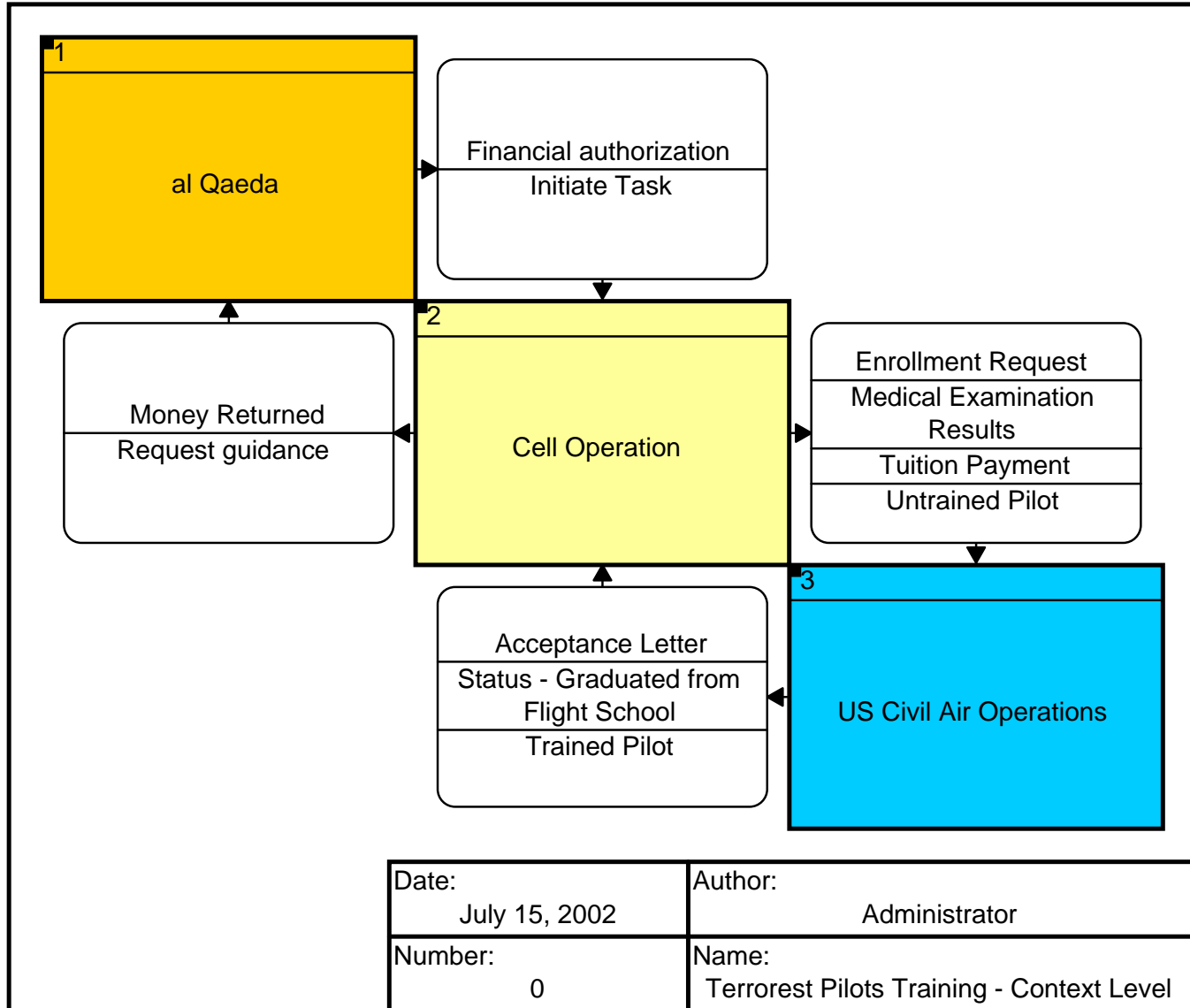
**Material/data extracted from various
Washington Post articles**

Functional Architecture – Context Level

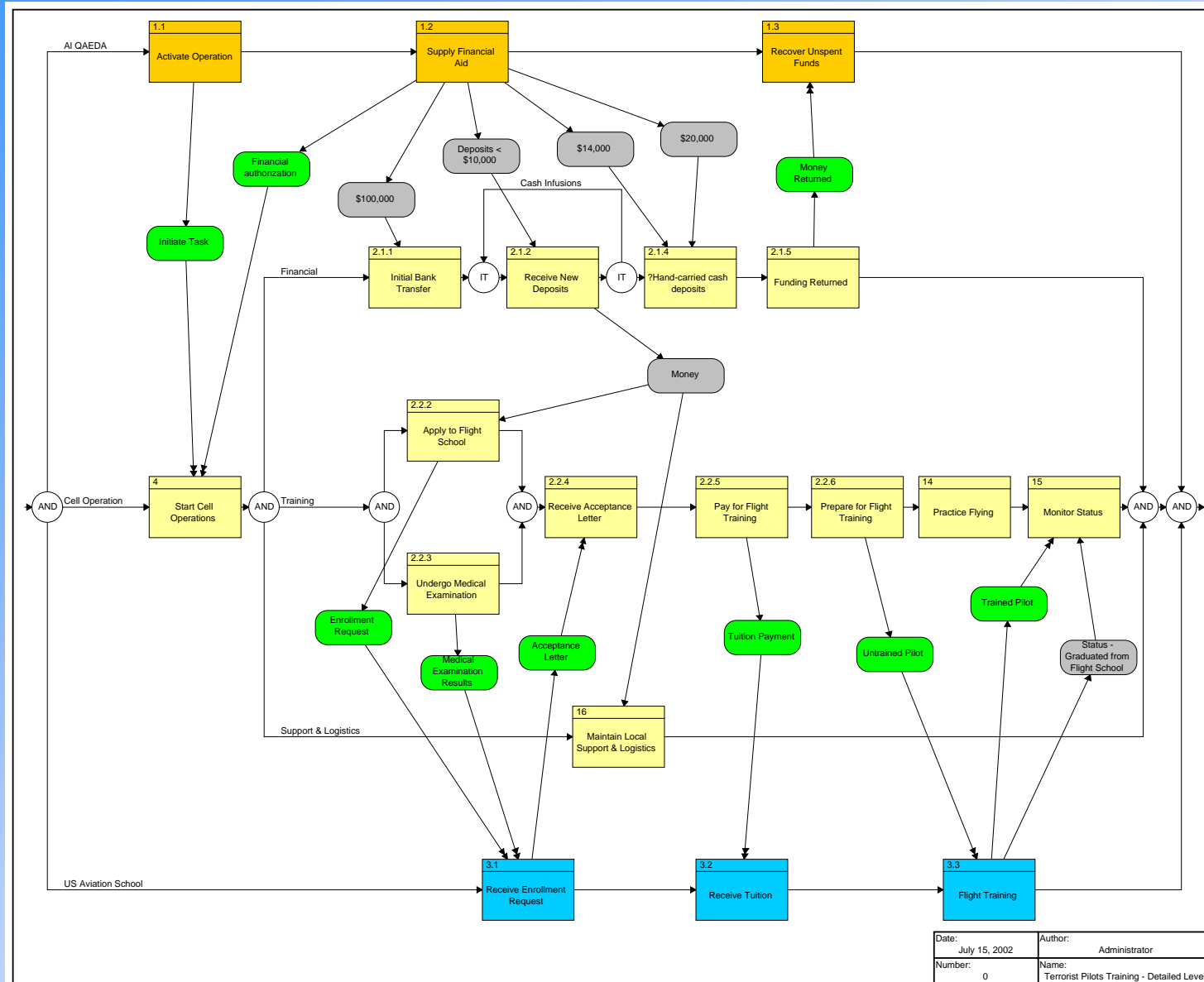


Date: July 15, 2002	Author: Administrator
Number: 0	Name: Terrorist Pilots Training - Context Level

N2 Interface Diagram - Context Level



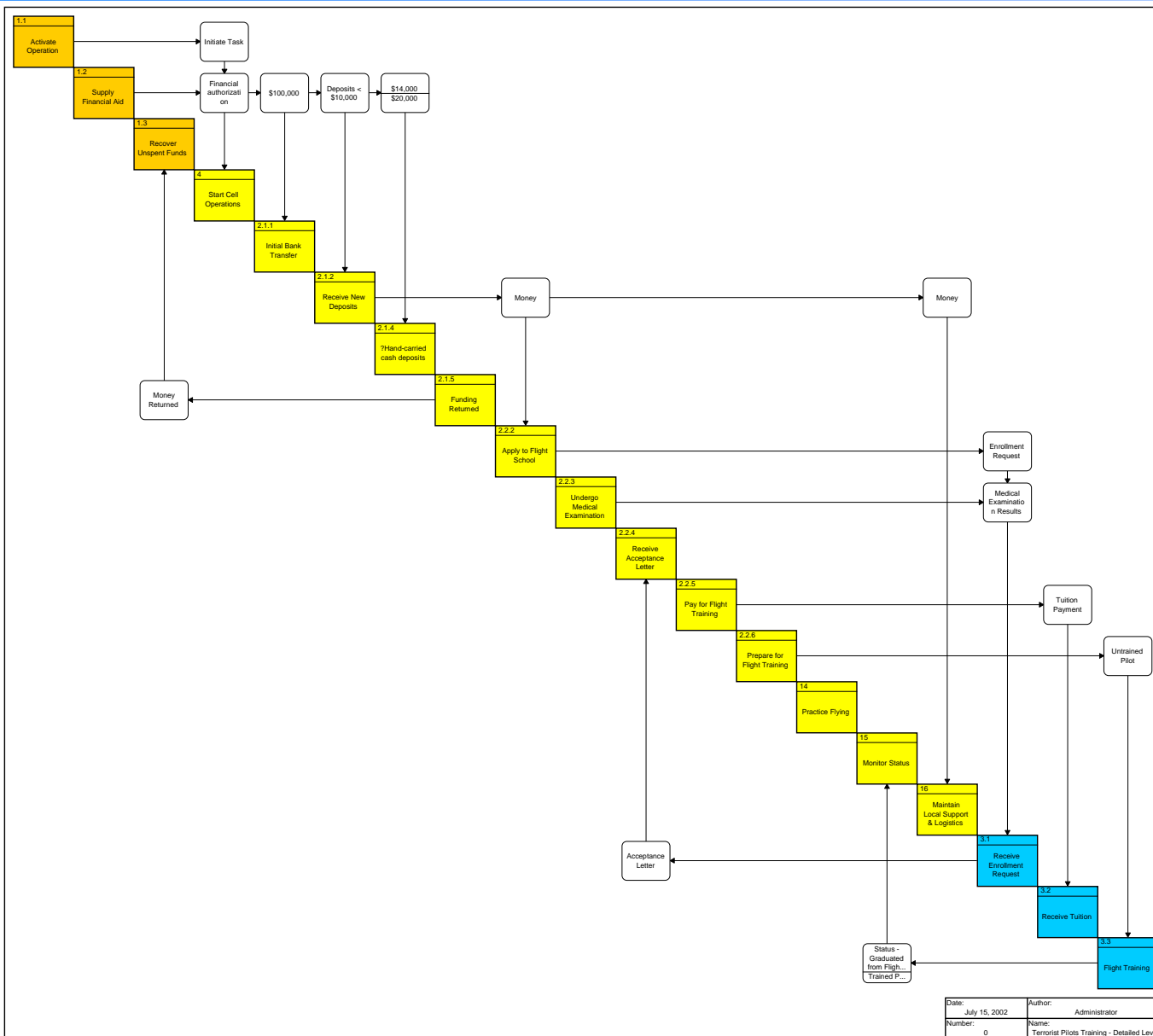
Functional Architecture – Detailed Level



Date:	July 15, 2002	Author:	Administrator
Number:	0	Name:	Terrorist Pilots Training - Detailed Level



N2 Interface Diagram – Context Level

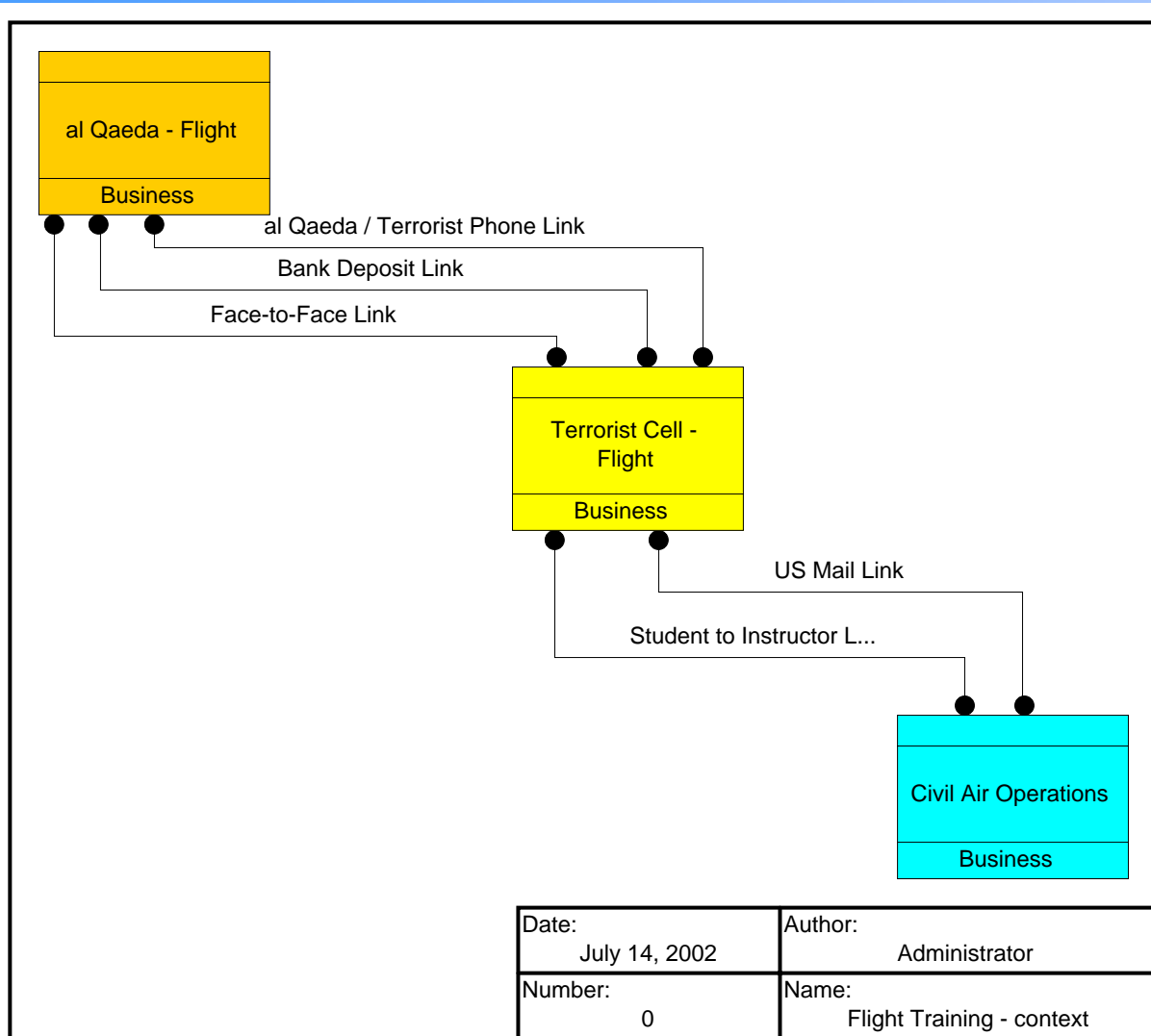


NOTE:

- The N2 chart is the easiest view for reverse engineering a system with only partial or missing data



Physical Links – Context Level



NOTE:

- If you missed it, we are building functional and physical models.

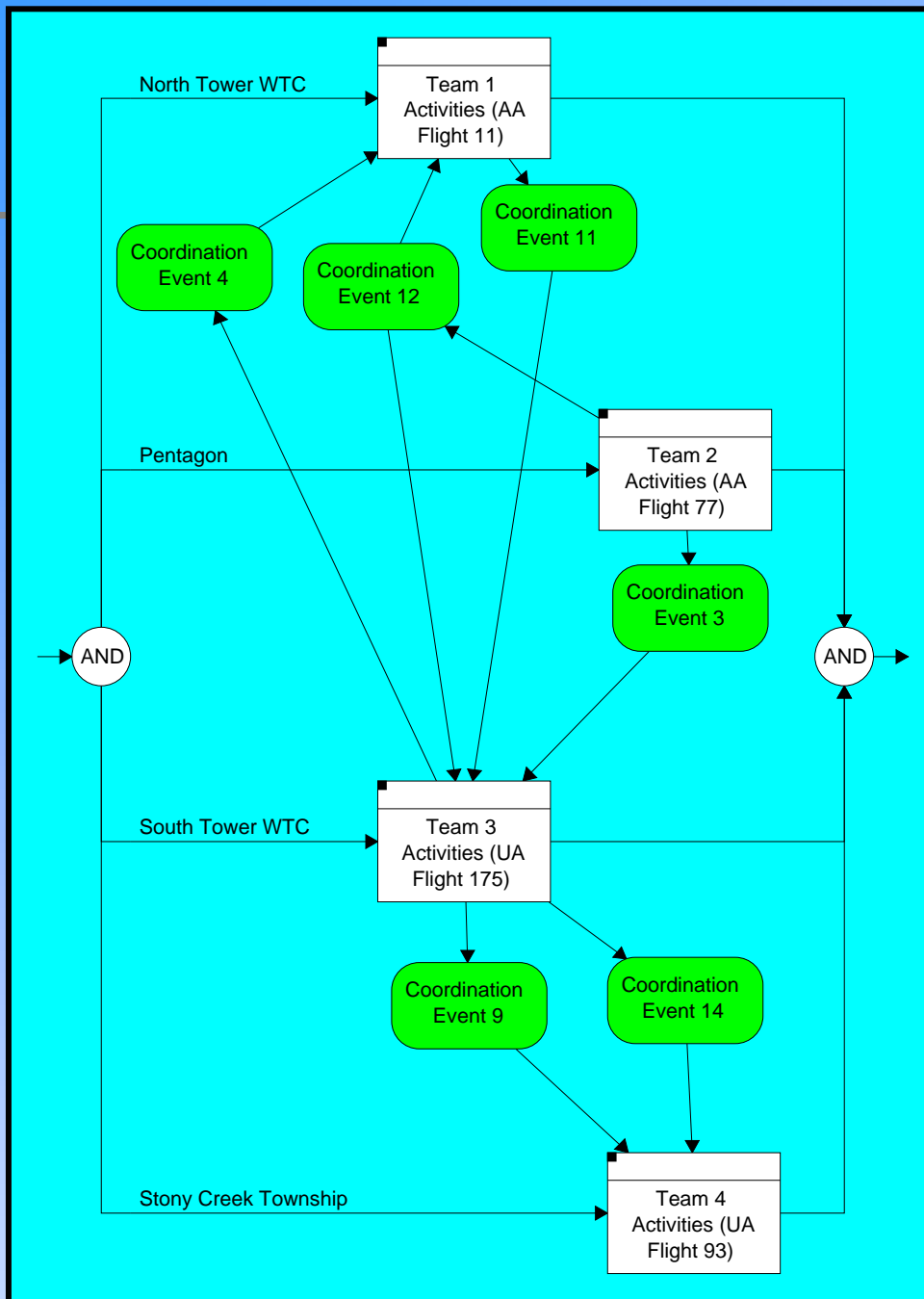
Analysis Overview – We are Trying to Get to the Top of the Pyramid



Views From the WTC Terrorist Attack

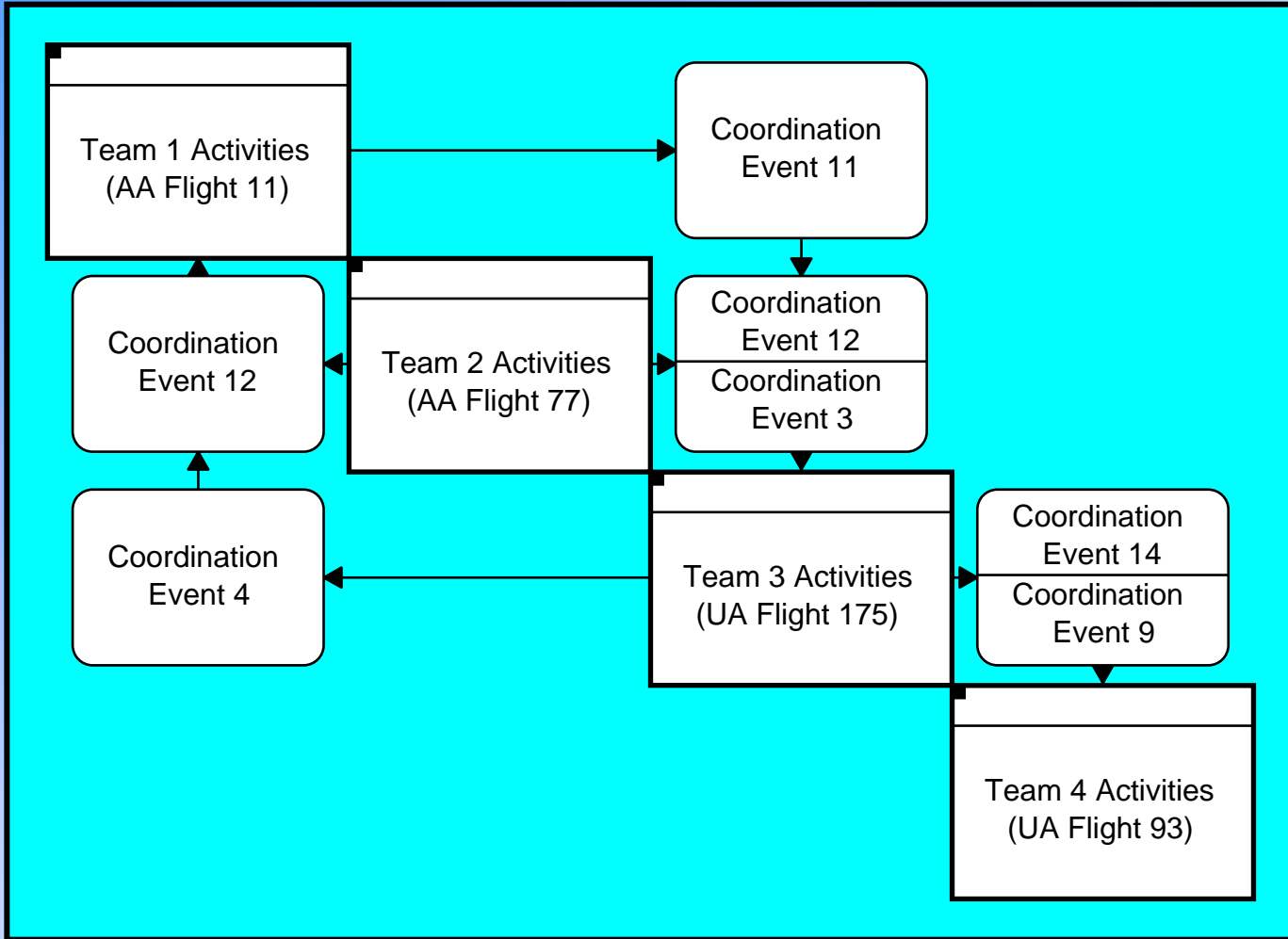
**Material/data extracted from various
Washington Post articles**

Activities of WTC Highjackers (Behavior - Top)

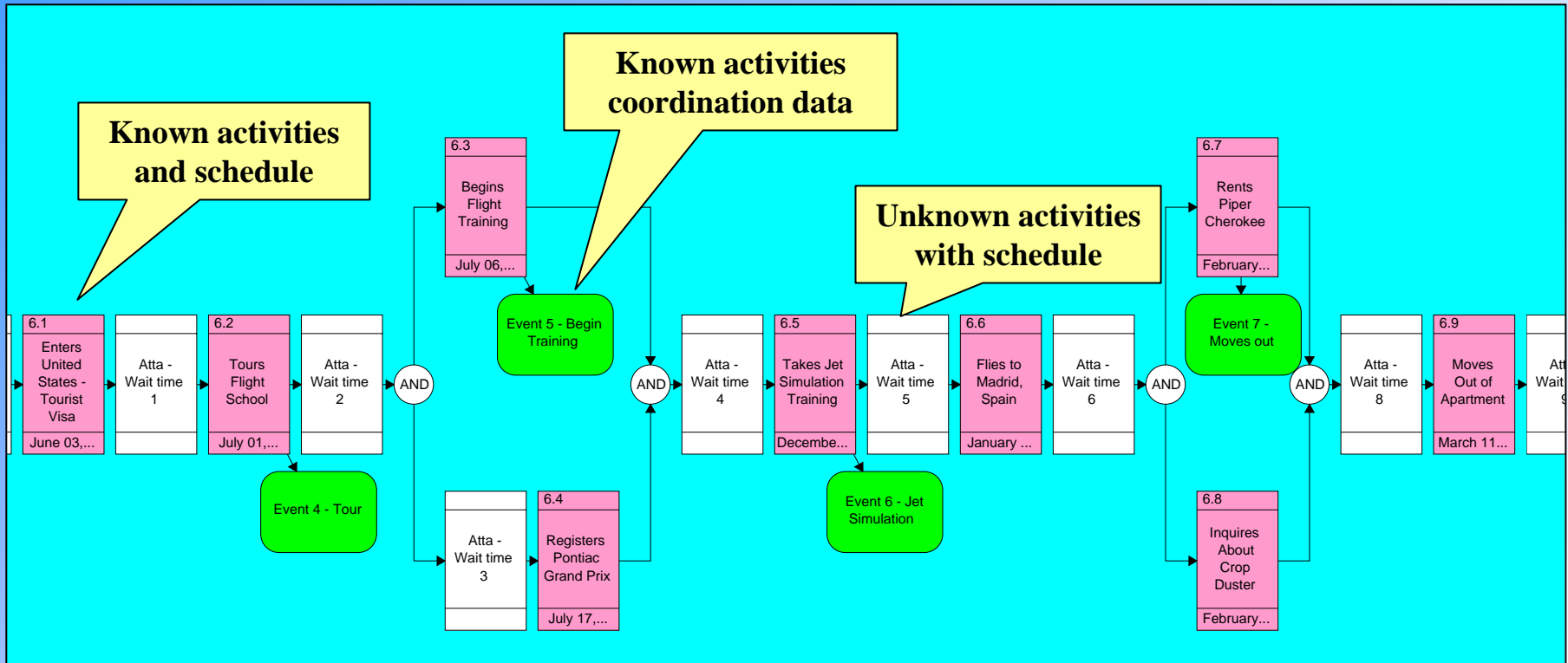


- Behavior and N2 Modeling included hierarchies down to behavior at the individual terrorist level (see COREsim simulator output for Atta)
- The cell is made up of 19 terrorists in 4 coordinated teams
- The total timeline from first terrorist entry into US until the attack on the WTC and Pentagon involved about 33 months

Activities of WTC Highjackers (N2 Interface Diagram – Top Level)



Section of ATTA's Timeline



NOTE:

- Behavior diagrams and scenarios are represented in a graphical language that is executable, allowing automatic simulation of the graphical model

Details of ATTA's Activities are in the Repository

Class: Activity

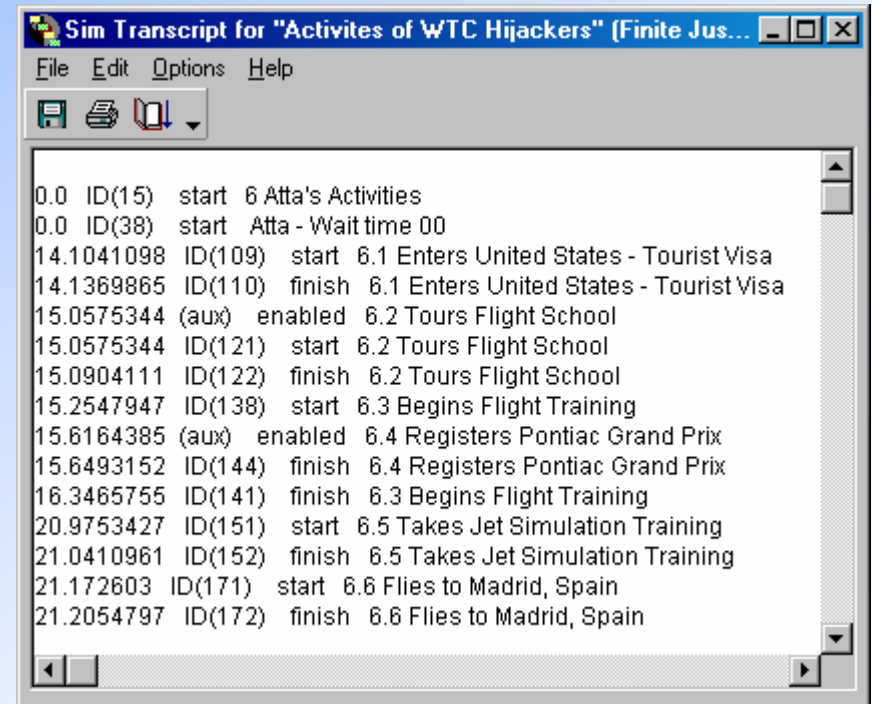
12/18/2001

Folders: Atta, Alomari, Waleed Alshehri, Wail Alshehri, Suqami



Number & Name	When	Description
6 Atta's Activities		
6.1 Enters United States - Tourist Visa	6/3/2000	June 3, 2000 Atta enters United States at Newark on a tourist visa.
6.2 Tours Flight School	7/1/2000	July 2000 Atta and Al-Shehhi tour Airman Flight School in Norman, Oklahoma, but don't enroll.
6.3 Begins Flight Training	7/6/2000	July 6, 2000 Atta and Al-Shehhi start pilot training at Huffman Aviation, Venice, Florida.
6.4 Registers Pontiac Grand Prix	7/17/2000	July 17, 2000 Atta registers a red Pontiac Grand Prix, at 4890 Pompano Road, Venice, Florida.
6.5 Takes Jet Simulation Training	12/29/2000	December 29-30 2000 Atta and Al-Shehhi pay for two three-hour jet simulator lessons in Miami.
6.6 Flies to Madrid, Spain	1/4/2001	January 4, 2001 Atta leaves the United States, flying from Miami to Madrid, Spain.
6.7 Rents Piper Cherokee	2/1/2001	February 2001 Early February Atta and Al-Shehhi visit Atlanta, rent a Piper Cherokee plane.
6.8 Inquires About Crop Duster	2/1/2001	Early February 2001 Atta inquires about crop-dusters at Belle Glade State Municipal Airport in Belle Glade, Florida.
6.9 Moves Out of Apartment	3/11/2001	March 11, 2001 Atta and Al-Shehhi move out of their Hamburg apartment.
6.10 Receives Traffic Ticket	4/26/2001	April 26, 2001 Atta receives a traffic ticket in Tamarac, Florida, for driving without a license.
6.11 Get Florida Driver's Licenses	5/2/2001	May 2, 2001 Atta and Jarrah get Florida driver's licenses. Atta lists address at 10001 N. Atlantic Boulevard, Coral Springs, Florida.

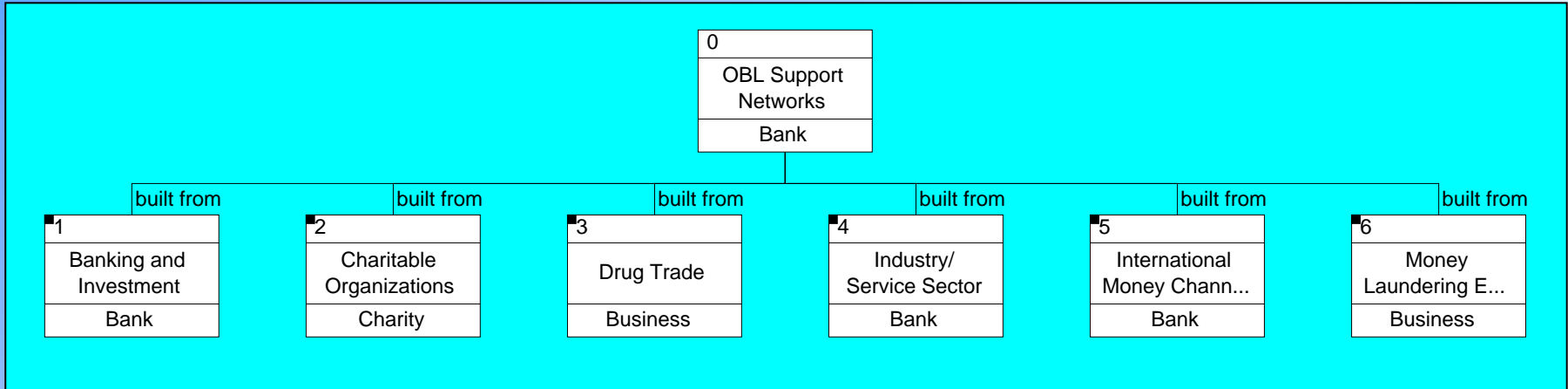
Highjacker Timeline for Atta (From COREsim)



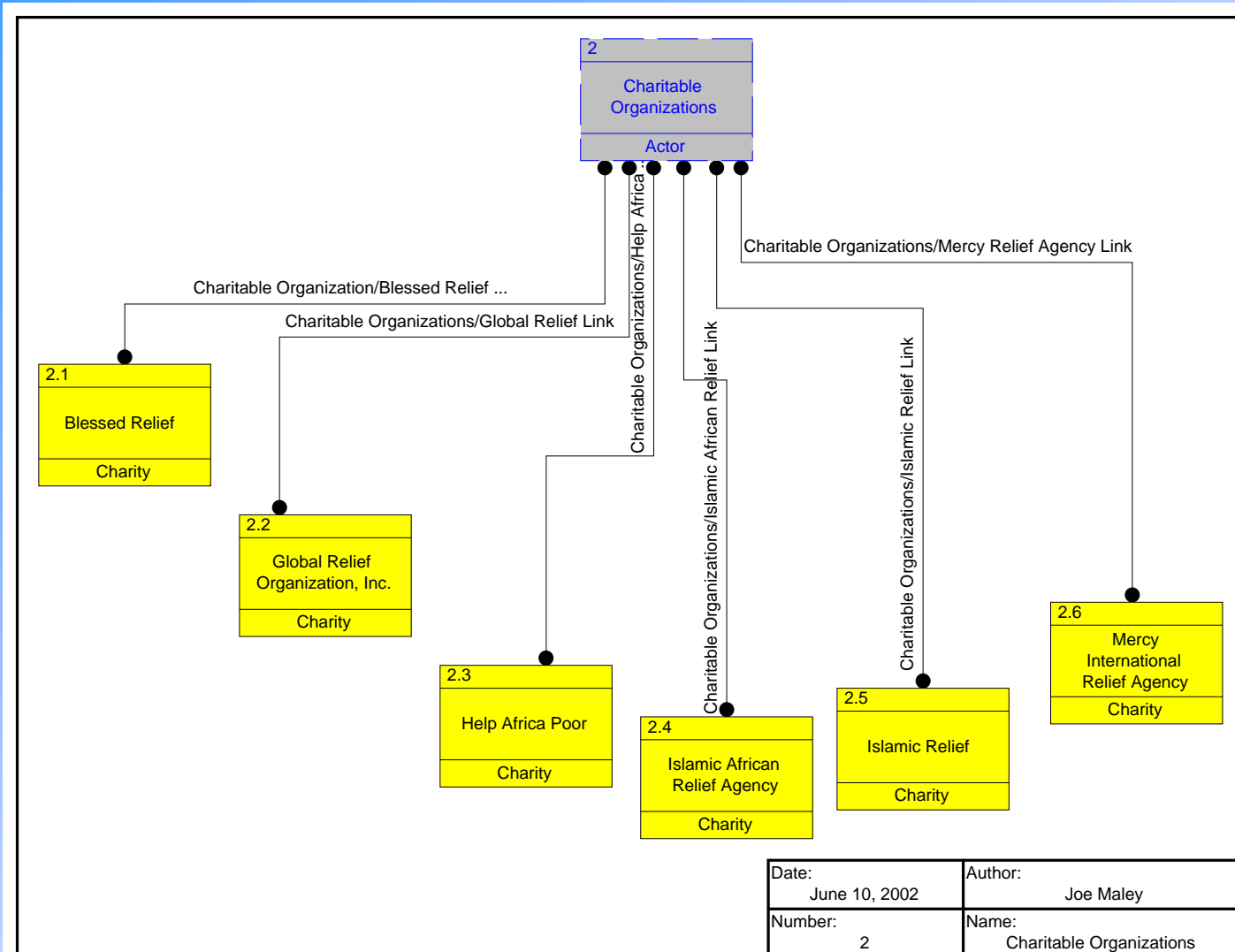
Views From Osama bin Laden: Financial Support Networks

**Source: Mr. Johnathon Winer testimony to US
Senate Banking Committee, September 2001**

Top Level - OBL Financial Support Networks



OBL Charitable Organization Links

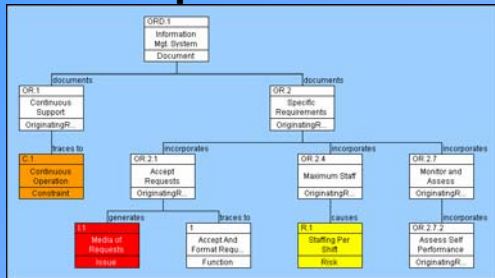


Analysis to a Purpose !

- **Analysis is about predicting the future – not documenting the past.**
- **How do we do this?**
 - **Recognize that a target may be viewed as a dynamic system**
 - **Systems may be analyzed statically or dynamically**
 - **System functions change slowly with time while physical elements may change dramatically**
 - **Systems need to be represented as separate functional and physical models.**
- **The model provides evidence of how well the target is understood.**
- **Total analysis is never completed.**

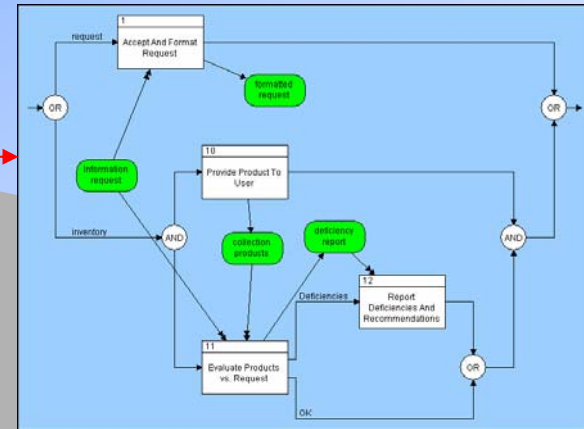
Consistency through Integrated Life-Cycle Knowledge Management

Source Requirements Domain



Originating requirements trace to behavior

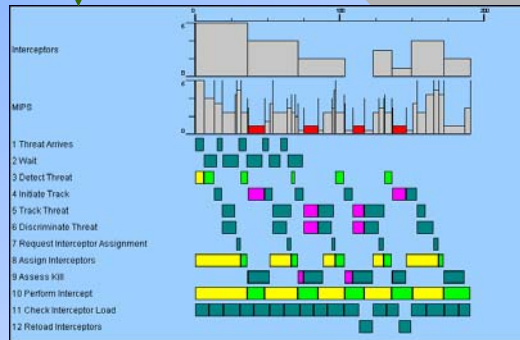
Behavior Domain



Behavior is allocated to physical components

verified by

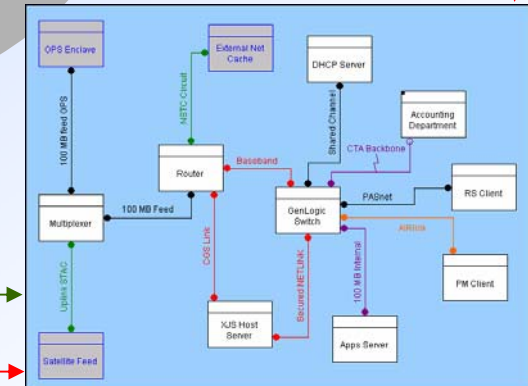
V&V Domain



verified by

verified by

Architecture Domain



Originating requirements trace to physical components

CORE Repository