Current Status of IAA system and IAA Alliance

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### What is IAA system?

- It stands for "I Am Alive".
- When Hanshin-Awaji earthquake occurred at Jan 17<sup>th</sup> 1995, it was hard to check safety information of peoples' families and friends in the disaster area.
  - Telephone lines were always busy (Lack of congestion control)
  - Television/Radio programs were announced negative information of victims (Lack of gathering positive information)
- WIDE project started to develop a database system which people can register victims' safety information in the disaster area and can retrieve those information from outside of the area in late 1995. We call it as IAA system.

http://www.iaa.wide.ad.jp/

## Design goals of IAA system

- Scalable and flexible
  - We cannot predict the size of disaster in advance. So capacity of the system must be easily extendible (IAA cluster and IAA transport).
- Robust and fault tolerant
  - Multiple components with same functionality are geographically distributed. IAA clusters have identical victim information.
- Protect personal privacy
  - Unexpected exploitation queries are restricted. And encrypted messages are used for exchanging information between IAA clusters.
- Provide accurate information
  - Prepare two types of registration format for oneself and other persons.
- Provide flexible user interfaces
  - All people may not be familiar with computers. And many kinds of user interfaces will be need.

# Design model of IAA system



# Prototype of IAA system

- IAA Cluster (Database service function)
  - OS: FreeBSD
  - Database system:
  - Exchanging Information:
- IAA Cluster (User interface function)
  - Web client
  - IAA Windows client
  - Phone (DTMF, i-mode)
  - FAX interface

INN

Postgres SQL

# Overview of prototype IAA system



## **Information Format**

Item	Registration	Query	Result
Victim Name	Mandatory	Mandatory	Expressed
Condition	Mandatory		Expressed
Location	Mandatory		Expressed
Nicknames	Optional	Optional	Expressed
Age, Sex, Blood type	Optional	Optional	Expressed
ZIP code, Company,	Optional		Expressed
Remarks			
Keywords	Optional	Optional	
Reporter Name,	Mandatory		Expressed
Relationship			
Confirmation Data	Mandatory		Expressed
Confirmation Method	Optional		Expressed

## Web Interface for IAA system

Reked	後来 Register Register Query 【AA		Back	Rekot Anota SPE MAR BIR BIR BIR	検索 Registry Registry Query IA	
Mandatory or Optional	Victim's details	-	Query details			
Mandatory Mandatory	C Alive C Sheldy injured C Sensualy marred		Item	Mandatory	Query details	
Mandatory			Real name	Mandatory		
			Am	Optional	years old	
Optional			. Sea	Optional	C Male C Female @ Not Specified	
Optional	years old		Blood type	Optional	CACBCABCO @Not Specified	
Optional	C Male ⊂ Female ™ Not checked C A C B C AB C O F Not checked		Postal (ZIP) code	Optional	New Japanese 7-digit np code(3 plus 4 digits)	
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#### **Registration format**

#### Query format

anere) / Query(In Japanere) / sh) / Query(In English) / IAA

41-12

Search St .

#### **Internet Disaster Drills**

- To be valuable of IAA system when unforeseen disaster occurs, people will have to remember the existence of system and register their own safety information.
- The drill is one of simulation of disaster and it will check the scalability and robustness of IAA system.
- Users who join the drill can send feedbacks to developers. These comments are useful to refine IAA system.

## **Results of Disaster Drills**

Date	Registration	Query	
17-18 Jan. 1996	about 6000		
17 Jan. 1997	about 2000	about 10000	
17-18 Jan. 1998	about 1000	about 3000	
17-18 Jan. 1999	about 6400	about 2000	
16-17 Jan. 2000	about 2100	about 3400	

• IAA system usage for actual disasters

- Taiwan earthquake, Sep. 1999
- Mt. Usu volcanic eruption, Mar. 2000
- Miyake Isrand volcanic eruption, Jun. 2000

prototype IAA system treats all victim information in one DB

4500 queries

780 queries

#### Toward "IAA Alliance"

 Prototype victim information format had determined in 1998. And some organizations started to develop other IAA systems.

System Name	Developer	OS	Year
CRL-IAA	CRL	PICKLES	2000
Monster-IAA	Sun microsystems	Solaris	2001
NetStar-IAA	Inst. of App. Int. Tech.	FreeBSD	2001

• An organization is required to examine the interoperability of each IAA system and to exchange information between developers.

## Overview of "IAA Alliance"

- A Consortium between organizations which develops IAA systems (2002/08/27).
- "IAA Alliance" is formed for exchanging information between members to encourage and extend the IAA system. And it will organize evaluation experiments with other related organizations to show effectiveness of the system for large-scale disasters.

http://www.iaa-alliance.net/

# Image of "IAA Alliance"



# Activity of "IAA Alliance"

- First Interoperability verification between Monster-IAA system and NetStar-IAA system at the disaster management drill which was organized by Tokyo metropolitan government and Nerima City.
- At first, interpretation of Japanese syllabary caused problem between two systems. This was fixed during the drill and 150 victims' information had exchanged between them.

#### Future works

- From Internet Disaster Drills and so on, we found the following issues to enhance the prototype IAA system.
  - Reconsider internal data format of prototype IAA system for supporting multi-byte characters such as victim name, nickname.
  - ZIP code is defined by each country but our prototype IAA system only considers Japanese ZIP code.
  - Easy and reliable registration method in disaster area are required. Other user interface programs should be developed.