

ANNUAL REPORT



International Federation of Red Cross and Red Crescent Societies
Fédération internationale des Sociétés de la Croix-Rouge et du Croissant-Rouge
Federación Internacional de Sociedades de la Cruz Roja y de la Media Luna Roja
الاتحاد الدولي لجمعيات الصليب الأحمر والهلال الأحمر

EFFECTIVE INFORMATION TECHNOLOGY (IT) & TELECOMS IN FEDERATION DISASTER MANAGEMENT

May 2006

The Federation's mission is to improve the lives of vulnerable people by mobilizing the power of humanity. It is the world's largest humanitarian organization and its millions of volunteers are active in over 183 countries. For more information: www.ifrc.org

In Brief

Appeal No. 05AA095; Appeal target: CHF 272,272 (USD 234,381 or EUR 179,921); Period covered: January to December, 2005; Appeal coverage: 62% *Note: some bookings were unfortunately not recorded in 2005, and therefore are not reflected in this report and financial annex.*
<click here to go directly to the attached Financial Report>

This Annual Report reflects activities implemented over a one-year period; they form part of, and are based on, longer-term, multi-year planning. All International Federation assistance seeks to adhere to the Code of Conduct and is committed to the Humanitarian Charter and Minimum Standards in Disaster Response in delivering assistance to the most vulnerable. For support to or for further information concerning Federation programmes or operations in this or other countries, please access the Federation's website at <http://www.ifrc.org>

For further information specifically related to this Annual Appeal please contact: in Geneva: Information Systems Department, Hugh Peterken, Head ISD, hugh.peterken@ifrc.org, +41227304540

Overall analysis of the programme

The massive deployments following the Bay of Bengal Tsunami and the Pakistan earthquake demonstrated both the need for sophisticated IT and telecommunications systems and their complexity. The project proposed in this appeal was to develop a deployable IT and telecommunications network ("Network in a Box") to improve the timeliness of response. "Network in a Box" can also provide a technically sound basis to develop the IT services provided in longer term programmes.

At the conclusion of the year, the aspirations encompassed in this programme have not been realized. While significant progress has been made and a technically excellent solution has been developed, no deployment has been achieved. The project delays centre on the tardiness in raising funding for the human resources required for successful deployment.

The development of Network in a Box started with an application to Cisco in June 2004. The first deployment is likely to happen over 24 months later. In technology terms, this delay is excessive, with the original equipment now superseded by a newer generation which is lighter and more integrated.

On the technology side, there are some significant achievements for the product. It has a good form factor (small and reasonably light) and the functionality is appropriate for its use. This has not always been the case with such

developments (note particularly the Net Relief Kits which were very heavy and had too much functionality and thus complexity). One disappointing aspect from the technology perspective is the ineffectiveness of the content engine in caching information. This is important where high cost, low bandwidth links are used in disaster response. Any future iterations of this project would either omit the content engine or look for better technology to support bandwidth limitations (such as RiverBed).

To summarise the key lessons from this project:

- The technology solution developed is needed to improve our disaster response capabilities.
- The project timelines have been too long.
- Future projects of this type must secure resources for the complete implementation in a reasonable timeframe.
- Further technology development in bandwidth optimization is needed.

Objectives, Achievements, and Constraints

Programme Goal: National societies improve their responsiveness to disasters and their ability to resource their programs through successful use of standard IT and telecom solutions and partnerships.

Objective: Capacity in IT and telecom is improved, and strategic partnerships with private sector are leveraged.

Progress/Achievements

Expected programme results:

- Disaster Management: improving the quality and speed of deployment of IT/ Telecom systems in emergencies.
- Partnerships: developing long-term partnerships with the private sector to fund, deliver, support and maintain a standard set of solutions.
- Staff development and training in support of the “Network in a Box” solution.
- Packaged and adaptable solutions that can evolve as requirements change, and are easy to understand by all parties involved, as well as easy to adopt by national societies.
- Cost savings: aim is to save 80% on building and deploying the “Network in a Box” (including resource and equipment donations from Cisco).

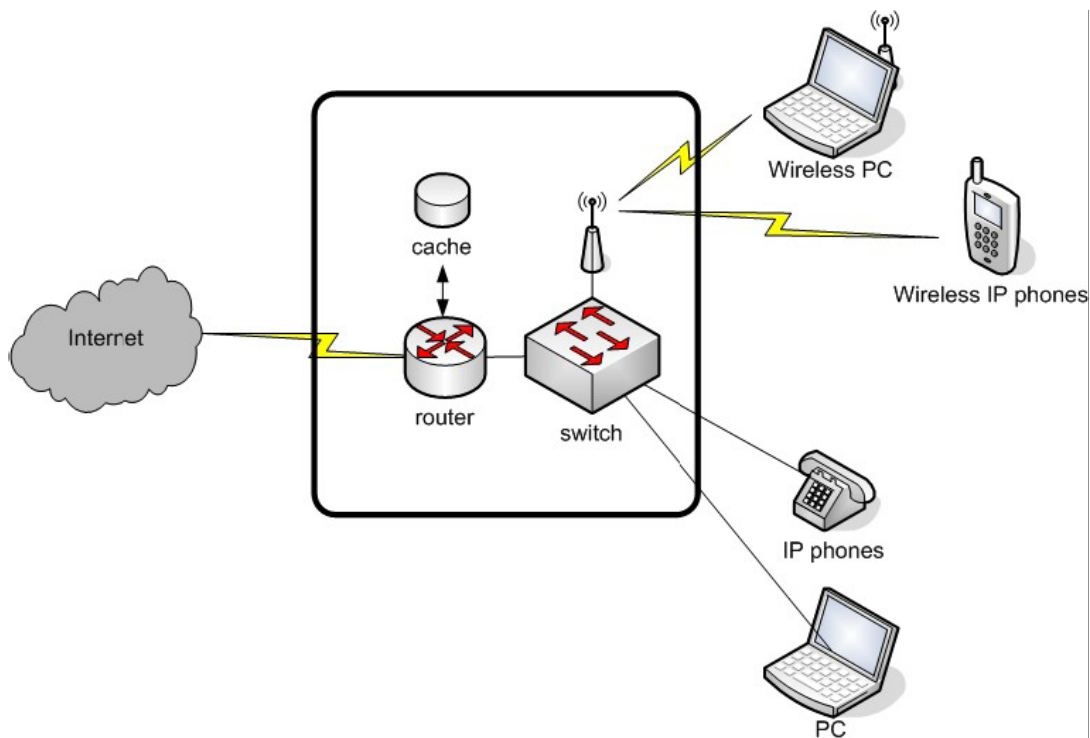
A deployable prototype of the equipment has been developed through contributions received. This development has proved successful, although complex. Pictures of the prototype are given below.



Prototype components mounted in frame. Note wireless and fixed IP phones.



Demonstration of prototype connection to satellite internet device



The tool being developed is known as a “Network in a Box”, a quick deployment computer network module to support Disaster Response Operations of the Federation with the following features:

- LAN: switch with Power-over-Ethernet, 20 ports available for user equipment.
- WAN: router for ISDN/ADSL/RBGAN, etc.
- IP telephones for on-site telephony.
- Wireless LAN: access-point and wireless IP phones.
- Content Engine for web caching.
- Internet and files sharing.
- Quick deployment, transportable, strong, reliable.
- Integrated in the current IT & Telecom strategy for Disaster Response.
- Possibility to be used to build a “permanent” network in the delegation after the emergency phase.
- Based on standard equipment.

The components of the program are:

- The evaluation of existing solutions used by the Federation and other agencies – complete.
- Selection of the equipment – complete.
- Set-up a prototype – complete.
- Set-up documentation – complete.
- Set-up training program – partially complete.
- Pilot deployment in non disaster situation – incomplete, expected mid 2006.
- Set-up five deployable modules – incomplete, must await evaluation of field deployment.
- Run three workshops for IT & Telecom technicians – incomplete.

Impact: The equipment has not been deployed so no field impact has been achieved. The development of the prototype has advanced thinking, within the Information Systems Department and through contact with specific national societies, in relation to technology possibilities for emergency and non-emergency IT and telecoms solutions. The prototype has been demonstrated to a number of national societies in Geneva.

A comparison with other humanitarian solutions indicates that the approach taken with this solution is likely to provide a more robust solution than currently exists on the market.

The prototype has been set up in a controlled environment in Geneva, connected to RBGAN satellite. The time for set up was approximately one hour. It is expected that this time-frame will be repeatable in the field in emergency situations.

The process of developing the product with Cisco has led to a maturing of the relationship. This has delivered considerable value in addition to the NinaB product. Specifically, the relationship has advanced the Federation's knowledge with procedures and technology that constitute best practice in the commercial world.

Constraints: The development of this product highlights the complexity of IT networks and the need for highly skilled staff to support deployments. While much of this requirement can be addressed through documenting procedures and practices, there is a need to consider how third level support can be provided in the long term. The long term training and support arrangements must be a prime consideration in developing this project.

One area where this technology was expected to significantly improve response was through providing caching of DMIS, FedNet and ifrc.org web sites. This would allow for reduced communications costs over expensive satellite links for accessing static information. Unfortunately the caching technology has not delivered a worthwhile reduction in link usage due to active elements on web pages. This technology will probably be dropped from future versions.

The final selection of an appropriate solution must wait until the existing equipment is deployed to the field. A number of additional features may be required but have not been developed into the prototype on the grounds of reducing cost and complexity. A list of requested additional features is given below:

- WAN IP telephony – To provide international phone calls over WAN.
- NAS – Network Attached Storage for local file storage.
- WAN access over Analog phone line.
- VPN Concentrator function: terminate IPsec connections for mobile users.
- A Web server for making content available to external users.
- RAS – Remote Access Service. Remote & Mobile users could dial into the NinaB to make use of its (fast) internet access. For locations where NinaB has much higher bandwidth than a single mobile user would find (ie. dial-up). In this scenario, the NinaB would act as an ISP PoP.

- Small form factor & weight. Sometimes the equipment must be taken as hand luggage on airplanes or helicopters, where space usage is critical.
- Quality of Service for voice (or other applications) over the WAN.
- SNMP remote management capability.
- Remote management for remote support.
- Battery power source so the unit can function where 220 Volt is not available.
- Wireless links AP to AP over several kilometers.
- Web content filtering.
- Firewall.
- Antivirus appliance (perform antivirus/antispam without PC software clients).
- Heat: NinaB to work under high temperature conditions.
- Dust protection against ie. sand or other dust.
- Automatic selection of QoS parameters to allow/block certain traffic for example when using a satellite connection where price / Mb is very high.
- Selection of voice Codec adapted to bandwidth available: for slow bandwidth use high compression and for high bandwidth use low compression and high voice quality.
- Accounting: reporting of which user downloads how much data, used for internal billing.
- An Ethernet Print Server to share a USB/Parallel printer among all users.

Abbreviation	Full description	Comment
ADSL	Asynchronous Digital Subscriber Line	High speed internet over telephone lines
AP	Access Point	Wireless access points
ERU	Emergency Response Unit	
FACT	Fast Assessment and Co-ordination Team	
IP	Internet Protocol	
IPSec	Internet Protocol Security	
ISDN	Integrated Services Digital Network	Telephone type connectivity
ISP	Internet Service Provider	
IT	Information technology	
LAN	Local Area Network	Within deployed office
Mb	Megabit	Sometimes megabytes
NAS	Network Attached Storage	
NinaB	Network in a Box	The deployable solution developed
PC	Personal Computer	
PoP	Point of Presence	
QoS	Quality of Service	
RAS	Remote Access Service	
RBGAN	Regional Broadband Global Area Network	Satellite internet connectivity
RDRT	Regional Disaster Response Team	
SMNP	Service Management Network Protocol	
Telecoms	Telecommunications	
USB	Universal Serial Bus	PC connection port
VPN	Virtual Private Network	
WAN	Wide Area Network	International connectivity

[Financial report below; click here to return to the title page and contact details](#)

International Federation of Red Cross and Red Crescent Societies

IT & TELECOM EFFECTIVENESS IN IFRC O

Selected Parameters	
Year/Period	2005/1-2005/9998
Appeal	M05AA095
Budget	APPEAL

All figures are in Swiss Francs (CHF)

I. Consolidated Response to Appeal

	Health & Care	Disaster Management	Humanitarian Values	Organisational Development	Coordination & Implementation	TOTAL
A. Budget					273,733	273,733
B. Opening Balance					0	0
Income						
<u>Reallocations (within appeal or from/to another appeal)</u>						
<i>European Commission</i>					109,083	109,083
<i>C3. Reallocations (within appeal or</i>					109,083	109,083
C. Total Income = SUM(C1..C6)					109,083	109,083
D. Total Funding = B + C					109,083	109,083

II. Balance of Funds

	Health & Care	Disaster Management	Humanitarian Values	Organisational Development	Coordination & Implementation	TOTAL
B. Opening Balance					0	0
C. Income					109,083	109,083
E. Expenditure					-17,647	-17,647
F. Closing Balance = (B + C + E)					91,436	91,436

III. Budget Analysis / Breakdown of Expenditure

Account Groups	Budget	Expenditure					TOTAL	Variance
		Health & Care	Disaster Management	Humanitarian Values	Organisational Development	Coordination & Implementation		
A							B	A - B
BUDGET (C)						273,733	273,733	
Land, vehicles & equipment								
Computers & Telecom	65,450							65,450
Total Land, vehicles & equipment	65,450							65,450
Personnel Expenditures								
Delegates Payroll	155,000							155,000
Consultants						16,500	16,500	-16,500
Total Personnel Expenditures	155,000					16,500	16,500	138,500
General Expenditure								
Travel	28,050							28,050
Office Costs	5,760							5,760
Communications	1,680							1,680
Total General Expenditure	35,490							35,490
Program Support								
Program Support	17,793					1,147	1,147	16,646
Total Program Support	17,793					1,147	1,147	16,646
TOTAL EXPENDITURE (D)	273,733					17,647	17,647	256,086
VARIANCE (C - D)						256,086	256,086	