IICA

Distance Education

Network

IICA VIDEO CONFERENCE DISTANCE EDUCATION NETWORK

The IICA is embarking upon a project that will ultimately establish a distance education network serving all 33 member nations. This project will begin with compressed video services then will add internet services as technology and pricing makes it more feasible. The initial phase of the project will provide a switching hub at the Costa Rica headquarters. This facility will provide not only the switching capabilities of being able to support multiple simultaneous connections. These connections can be established from any member nation to any other member nation or to sites outside of the IICA.

This network is designed to support dial-up services such as Integrated Services Digital Network (ISDN), dedicated full time circuits such as E1 or Satellite based digital services. By designing the network in such a fashion, we will be able to look for the most cost effective, flexible, reliable method of connection as each country is added to the network. This is important since the nations have differing levels of infrastructure available to them as you go from country to country.

The initial design begins with the communications hub in Costa Rica along with a central teaching site at the IICA headquarters. The purpose of this site is to begin the establishment of programs to be offered over the network as it evolves.

A critical component in establishing the initial network is that of developing the support staff needed to maintain and operate such a network. The creation of the hub site in Costa Rica will go a long ways in attaining that goal. As an initial part of the project the IICA technicians will assist with the installations and will receive technical training at the Center for Distance Learning Research (CDLR), a part of Texas A&M University at College Station, Texas. In addition to the initial overview training provided by the CDLR, additional manufacturer provided training may be added as it is deemed necessary.

While the technical staff are receiving the technical training, the educational support staff will also be in the process of attending training needed to provide the skills that they need. Again training will be provided by the CDLR that focuses on the skills need to provide effective distance education over the type of system that the IICA has chosen to implement. These skills include things such as presentation skills using packages such as Power Point, methods for increasing interaction, how to get faculty members to make the maximum use of the equipment available and other skills. These classes are taught in a teach the teacher fashion so that the IICA support staff can in turn assist the instructors.

In addition to the central switching equipment, the initial phase of the project provides recommended configurations for three types of systems. These three types are:

The first system is the large room system that is intended to be installed at the central site at Costa Rica. This system is intended to be the location that hosts

the majority of the IICA initiated courses. This system has two, 35 inch monitors, push to talk camera control microphones, a document camera, an external camera for monitoring a wetlab, and an electronic whiteboard. This configuration has all of the equipment that is state of the art in distance education systems. This is the system that is intended to be used primarily at the central site. See attachment 1 for the drawing and price budget estimate for this configuration.

The second size room, while quite comparable to the first room uses slightly smaller monitors (32"), ceiling microphones rather than push to talk microphones and has no electronic whiteboard. While this type of site is intended primarily to receive classes, it can without a doubt also initiate courses. In fact this type of configuration is the one chosen for at least 80 of the over 100 distance education classrooms that have been installed in Texas and Mexico as a part of the Trans Texas Video Network (TTVN). This is the initial configuration recommended for the Venezuela and the other regional headquarters. See attachment 2 for the drawing and price budget estimate for this configuration.

This third configuration is designed for sites that are limited in adequate space to support a full configuration. While again this is a two-way interactive system with all of the capabilities of the full size room systems it uses a single 27" monitor with picture in picture to show both sites and three standard desk microphones. It should be kept in mind that while smaller than the other systems it can still easily be used to originate a course. See attachment 3 for the drawing and price budget estimate for this configuration.

A fourth option, desktop video was not included in any of the initial recommendations. These systems use a small camera on top of a computer to display the local image and a window on the PC to display the remote image. While much less expensive and less space consuming these systems have not proven themselves to be very effective at distance education at this time. They may be an option that the IICA may want to further evaluate as time goes by and technologies change.

While this document has been focusing upon the distance education capabilities of the system to this point, the systems as installed can easily support administrative meetings. The addition of a large auditorium type site for large meetings may be added in the future.

There are a number of issues that need to be resolved in order to complete the first phase of this project. One assumption is that all of the coordination on the TAMU side would occur through the Office for Latin American Programs and Dr. Gabrial Carranza. These issues are:

The IICA needs to decide how to purchase and install the equipment needed for the first phase. One method discussed and the one recommended is that of awarding the funds through a grant to the Texas A&M University System (TAMUS) Texas Agricultural Extension Service (TAES). This would allow the actual purchasing of the equipment to occur through State of Texas purchasing provisions designed to handle such acquisitions. The IICA would still facilitate the

transportation of the equipment from the United States to the receiving country. With such a complicated system it is desirable to have a single source handle not only the equipment sales but also the equipment installation. This greatly reduces finger pointing. The installation would be accomplished by a combination of Texas A&M University and GTE technical staff. If this is the method chosen, Dr. Alan Jones of TAES would handle the administrative coordination of the project (such as contract initiation) and Dr. Kim Dooley with the support of Walt Magnussen of Texas A&M University (TAMU) would handle all of the technical site coordination. Niki Harris of the TTVN would serve as operational consultant for all issues involving scheduling.

The technical staff of the IICA, with the assistance of Karina Ramirez, would facilitate the construction of the classrooms and operations center at Costa Rica. While the actual construction work would be done under the guidance of the facilities staff of the IICA at Costa Rica, close coordination would be required to ensure technical adequacy. Walt Magnussen of TAMU would provide backup support to Karina. An approximate drawing of the facility is included in attachment number four.

There has been a desire expressed for the IICA network to become an affiliate of the TTVN network. The affiliation process has been in place for the TTVN network for the past four years. This process was initiated to allow non Texas A&M University System entities to be able to leverage the resources that have been established over the past 7 years that the TTVN has been in operation. To this day there are about seven TTVN affiliates. The benefits of being a TTVN affiliate are that once you are connected you have access to all services provided to other TTVN members. These services include access to over 100 sites state wide within the State of Texas including connection to the three other State System sites within the State of Texas (University of Texas, Texas Tech and the University of Houston), access to a satellite uplink, access to ISDN lines at United States rates and many other potential benefits. The initial phase uses the TTVN link to Mexico to support connections to that member nation. The cost of the TTVN affiliation is $10,000 per year plus the connection hardware required for the IICA to connect. The TTVN affiliation process requires a sponsor as well as the submission of a form. Dr. Kim Dooley would be able to help with this part of the project. The affiliation is only required as a per channel connection for the entire IICA network. In other words if Costa Rica initially connects via a dial-up connection and six months later Barbados decides to also connect, a second affiliation fee of $10,000 per year is not required. The second fee would only be necessary when and if the IICA decided that one simultaneous connection was not sufficient.

The communications lines include three components, the local access lines at the member nation side (i.e. Costa Rica, Venezuela, etc.), the international carrier link portion via some carrier such as AT&T, and the College Station side with GTE. Together these three components make up the entire link. These three portions could be handled as follows:

The local access lines would need to be coordinated individually in each member nation. Since all member nations have different levels of technical infrastructure and while some are still very much under a monopolistic government owned model others have evolved to a more competitive model. Karina Ramirez should be the focal point for the ordering and installation of any such lines with the support of Walt Magnussen.

The international portion of the lines should be negotiated under a blanket contract for the IICA. Since AT&T has the largest number of connections to all of the member nations it would be advantageous for a contract to be signed with them. Negotiations should begin immediately with AT&T and in the event that a suitable arrangement cannot be met with AT&T other carriers could be contacted for similar negotiations. Walt Magnussen could arrange for such negotiations but the IICA should have a person present during at least the final phase of the negotiations. The final contract would be signed by the IICA.

The College Station side of the line would be connected with ISDN lines provided by GTE. Since GTE is the local carrier and since TAMU has a fixed contract with GTE this would be the most cost effective method of connection. In order to support a 384 Kbps video connection three ISDN lines would be required. The monthly cost of such a link is about $100 per month plus the cost of any dial-out calls that may be initiated from these lines at about $90.00 per hour to call elsewhere in the United States. These costs can be paid by TAES and rebilled to the IICA. Since most dial-up calls will originate from one of the IICA member nations this type of calling should be minimal. Walt Magnussen and Dr. Kim Dooley will be responsible for coordinating this with the IICA and with GTE.

The training schedule needs to be coordinated with the CDLR and with the IICA staff. Since the proposed training is specialized custom training the courses requested will be developed specifically to meet the needs of the IICA. The IICA has requested that other organizations such as the CATIE be able to attend at the same time that the course is offered for the IICA. This would be a good idea and should be followed up on. Karina Ramirez should assess the training needs of the other agencies. Dr. Lloyd Korhonen of the CDLR is responsible for providing the training. Dr. Kim Dooley could serve as an contact point between the IICA and the CDLR.

An operations center is going to be established that will facilitate the installation of new systems, resolve network problems as the arise and manage the scheduling system as it is developed. Niki Harris of the TTVN can be a valuable resource in helping to make decisions regarding this operation. She is currently managing the operational side of the TTVN and as such is directly responsible for the success of one of the largest distance education networks in the United States. Attachment number five describes some of her initial recommendations.

In July of 1997 Niki Harris and Walt Magnussen were asked to assess the feasibility of establishing video conference based distance education networks in three of the member nations. These countries included the hub site in Costa Rica, a medium regional site in Venezuela and a small site in Barbados. Each site was evaluated regarding the technical capabilities of the local vendors, the ability of local telephone company to support the telecommunications links needed and lastly the ability of the building itself to be able to support such an operation. The results of the three visits is as follows:

Costa Rica - This is the hub site and as such will support not only the local video conference system but will also support the video switching infrastructure for the entire IICA network.

Technical capabilities of local vendors - there did not currently appear to be a large number of local firms that could help to support a video installation. Anixter, a partner in the Mexico installation has mentioned that they are going to establish an office in San Jose in the near future so this may be something to keep in mind. Since the IICA has a large technical staff at Costa Rica that may not be as much of an issue as with other sites. With occasional telephone support from TAMU, the IICA office in Costa Rica could easily become very self sufficient.

Ability of the local telephone company to support the type of communications links required - in the case of Costa Rica the local telephone is the ICE. ICE has the ability to support the ISDN lines desired at the IICA office. They are willing to provide either multiple BRIs or a single PRI. Either will work well but the determination of which is to be used must be made before the hardware is ordered. They are installing fiber optic cable closer to the IICA to be able to support PRI should it be desired. They anticipate being able to support such links by October of 1997. The pricing for either the PRI or BRI is within the budget of the IICA. The service attitude of the ICE appears to be excellent. They currently do not have enough AT&T trunks to support the type of operation that we are proposing but they appeared very willing to work on expanding the facilities to meet future needs. There first major upgrade will occur in December of 1997 as they add the SS7 network links needed to support ISDN.

The ability of the building to be able to support video conferencing - While the buildings as they currently are configured would not work well for the network proposed, the required modifications have been identified and can be scheduled as soon as the project is approved. The plan is to install the switching equipment in the existing computer room. The space is available, the electrical power required is available and the ability to cool the equipment has been deemed to be sufficient. While there is a UPS in the existing communications room it is not large enough to support the additional proposed equipment and must be augmented through this project. There is a pair of necessary fiber optic cables that are installed between the building that has the hub and the building that will house the video conference system. The fiber is installed to the closet but would need to be extended to the classroom. This could be done by the technicians installing the video conference system. While there is a large amount of construction planned for the existing cafeteria that is called the Mexico room to allow it to adequately support the video conference room and operations center the work appears to be well within the capabilities of the facilities staff at the IICA office in Costa Rica. A general list of requirements for the room is included in attachment six.

Venezuela - This IICA site would be housed in an office in Caracas that is currently under construction. This would be the middle sized system.

Technical capabilities of local vendors - There is one or two local vendor that have experience with installing system in Venezuela that could be used for backup support in the future. The organization that will share the building with the IICA in Caracas will have a large computer operation that will require technical staff. It is recommended that they be contracted to provide backup support. This center will be operated by means of an agreement with the CIARA Foundation of the Venezuelan Government and the Hemispheric System of Agricultural Training (SIHCA).

Ability of the local telephone company to support the type of communications links required - This is a major problem in Venezuela. The local telephone or CANTV is just in the process of rolling out ISDN. More of a problem than their lack of technical support is their apparent lack of direction in how they intend to market the services once they are available. At this point they are only allowing network connections to be established if they own the end equipment. This is not a strategy that will work in the long run. CANTV has installed 5 rooms across the country that would be available for the IICA to use. The initial recommendation is that the IICA use one of the CANTV sites that happens to be located in close proximity to where the IICA office is located.

The ability of the building to be able to support video conferencing - We visited the proposed IICA classroom site in Caracas. It is in an office complex that is currently under construction. There is a proposed computer room on the second floor of the building, a distance education classroom on the third floor and a standalone conference room on the top floor. The computer room appears to be more than adequate for the IICA purposes. The conference room on the top floor, while it make an excellent classroom or meeting room site, would not be appropriate for student access. This floor is designated an administrative floor and after hours classrooms would cause logistics problems. The classroom on the second floor could be a difficult to support for architectural reasons. The room is close to a busy street and has single pane glass which makes noise a significant problem At this time it is unsure if there is going to be air conditioning in the room which further compounds the problem since windows will be left open for circulation reasons. The room also has a significant amount of glass which could be a light problem unless additional window covering is applied. The combination of the glass windows and the outside noise could make this a difficult room to work with. If this is selected as the final site carpet, air conditioning, window covering and wall covering could make this a suitable site. Again it is recommended that this decision be delayed for about one year until the building can be completed by which time the CANTV will hopefully have modified their policies.

Barbados - This IICA site would be housed at the IICA office at Barbados. This would be the small sized system due to room size constraints.

Technical capabilities of local vendors - Outside of the local telephone company there appears to be little technical assistance for video conferencing in Barbados at this time. With the proper selection of a local site coordinator for the IICA which would be supported by the Costa Rica office technical issues could be dealt with until the technology became more prevalent in the region.

Ability of the local telephone company to support the type of communications links required -
Of all of the telephone companies that we dealt with on these visits the local company Bartel was by far the most accommodating. They have sufficient AT&T trunks into the island, they are willing to grow whatever is necessary to establish a Caribbean hub at Barbados, they already have ISDN available at the IICA office which are cost effective and they appear to have a very positive service attitude. We discovered an additional potential benefit during the visit. It appears that Barbados through Bartel is the first island in the Caribbean to have their switch upgraded to ISDN. They are currently in discussions with a few of the other Caribbean islands to install remote extension off of their switch at the other islands to allow them access to ISDN without the costly switch upgrades that they would have to incur. This is what is referred to as an overlay network, a

technology popular in the United States for serving rural areas cost effectively. If this were to happen there is a great possibility that we could negotiate a much better rate for inter-island links using the remotes and create a secondary hub in Barbados. This possibility should be closely monitored as the savings could be substantial

.

The ability of the building to be able to support video conferencing - The conference room proposed at the IICA office in Barbados while small is very adequate for the conference purposes. It could comfortably seat about 10 people. There is a communications closet within 20 feet of the classroom that has the existing telephone lines installed. AC power is sufficient and all in all it appears to be a very good site.

Contact list - the following are the contacts for the sites visited:

Costa Rica

Main Contact

Jaime Vinas Roman, Director of CECAP
Phone: 506-229-0222
Fax: 506-229-4741
e-mail: jroman@iica.ac.cr

Technical

Finn H. Damtoft, Director of Information, Documentation and Informatics
Phone: 506-229-0222
Fax: 506-229-4741
e-mail: fdamtoft@iica.ac.cr

Karina Ramirez Cartin, System Analyst
Phone: 506-229-0222
Fax: 506-229-4741
e-mail: kramirez@iica.ac.cr

Academic
Juan Caliva Esquival, Ph.D.
Phone: 506-229-0222
Fax: 506-229-4741
e-mail: jcaliva@iica.ac.cr

Venezuela

Rafael Isidro Quevedo, Executive Secretary SIHCA
Phone: 582-573-1021
582-572-1243
582-572-1810
Fax: 582-576-3150
e-mail rafaque@telcel.net.ve

Eduardo Lindarte, Specialist
Phone: 582-573-1021
Fax: 582-576-3150
email: iica@conicit.ve

Barbados

Dennis Moses, Deputy Representative
Phone: 246-427-4740/1/2
Fax: 246-429-3509
e-mail: iicabar@caribsurf.com

Summary

The proposed distance education network that the IICA is proposing will be a good start in not only in providing agricultural information dissemination to the member nations of the IICA but also act as a conduit for providing distance education to these nations.

The IICA plan is well developed and it shows the aggressiveness in providing services for its constituents. The Texas A&M University System is very proud to be able to play a part in the development of this network.

One fact that was apparent wherever we went was that distance education is going to be a large part of the educational process in many of the nations served by the IICA. In Costa Rica we met with the CATIE, and the Distance Education University. In Venezuela we met with CANTV to discuss a country wide network that is in the latter stages of implementation. In Barbados we met with the Barbados Community College to discuss their plans. All of them viewed these types of services a critical to their being able to meet the future needs of their students. The IICA network as initially designed is primarily a dial-up, usage sensitive network. While this is the most cost effective initial configuration it will need to be reviewed

as the network grows. The largest cost in most of these networks is the ongoing communications link costs. These costs, however can be minimized by getting larger lines and sharing them with other entities. By tracking the distance education activities in each nation and leveraging the IICA network we can develop a network that would not only meet the needs of all concerned but would also be cost effective.

If a distance education network is to succeed there are three components that are necessary. They are the vision by the administration that this is the best way to meet the educational needs of the students, a solid technical organization to be able to resolve problems as they arise and an academic component that has the enthusiasm for the project that will get them through the trying times that will occur. Since all three of these are strengths of the IICA the likelihood of a successful project is great.

Finally I would like to thank a few of the many people that assisted us with this evaluation. Niki Harris and I were treated like royalty everywhere that we went. From Karina traveling to Barbados with us on short notice, to the Venezuela group giving up their holiday to make sure that we had all of the information that we needed to Dennis meeting us at the airport at 1:00 in the morning on a Friday night. We could not have asked for anything else. It has been a real pleasure working with the IICA to this point. I am looking forward to working with you in the future.

IICA Distance Education
Project Budget

Description	Qty	Unit Cost	Total Cost
Room video conference system as per attachment #1	1	$ 73,892.00	$ 73,892.00
Equipment to connect 3 ISDN lines at TAMU	1	$ 4,700.00	$ 4,700.00
Video Server MCU as per attachment #1A	1	$ 118,900.00	$ 118,900.00
PC computers, printers, ethernet for DL center as per attachment #1B	1	$ 17,386.00	$ 17,386.00
Installation includes all equipment listed above	1	$ 25,900.00	$ 25,900.00
Training			
4 IICA staff for Distance Learning Certification class*	4	$ 2,500.00	$ 10,000.00
4 IICA staff for Custom Technology class*	4	$ 3,000.00	$ 12,000.00
*rates do not include travel			
Annual TTVN affiliation (this is a per year cost)	1	$ 10,000.00	$ 10,000.00
ISDN line costs for one year	3	$ 384.00	$ 1,152.00
TAMUS total			**$ 273,930.00**

This does not include the line costs or line installation for ICE in Costa Rica

GTE

Attachment 1

Texas A&M University

TAES - Costa Rica
For: Walt Magnussen
GTE State Catalog

				Equipment Price	
Matcode	Part Number	Description	Qty	Unit Price	Extended Price
475080	VTEL232TCD	SYSTEM DUAL 32IN S-VIDEO	1	$35,196.00	$35,196.00
475083	TC-RS449/RS366-	DUAL RS-449 CABLE	1	$360.00	$360.00
473152	RM-32/35	MODULE RISER 32IN/35IN	2	$695.00	$1,390.00
MAINT	WYI-TC-2	TC2000 1st Year Enhanced Warranty	1	$900.00	$900.00
329338	MP-BK	MOBILE PODIUM BENCHMARK STYLE	1	$5,100.00	$5,100.00
600108	19377-100-861	CABLE S-VIDEO 100FT	3	$105.67	$317.01
492007	DOC400	STAND DOCUMENT W/30' (9M) CABLE	1	$3,700.00	$3,700.00
400669	LU-100	KIT ELMO LIGHT FOR EV-368	1	$400.00	$400.00
499519	SLV-390	VCR Sony 4 head Cassette Recorder	1	$237.00	$237.00
481354	SCM810	MIXER EIGHT CHANNEL AUTOMATIC W/LOGIC	1	$1,403.00	$1,403.00
497429	RKC-800	KIT XLR CONNECTOR FOR SCM800 MIXER	1	$191.00	$191.00
506804	LI720U	UPS Fortress 720VA 5M Full-Load Backup	1	$468.22	$468.22
498234	C4661A	HP OfficeJet Model 330	1	$625.00	$625.00
399107	21211	AT&T Single Line Phone	1	$66.36	$66.36
514958	KV-32S22	Monitor Color Sony 32 Inch	2	$809.00	$1,618.00
482837	YCVB/VDA	AMPLIFIER 1X4 S-VIDEO DISTRIBUTION	2	$209.00	$418.00
478387	JMW660	MOUNT MONITOR 32" PEARLESS FOR THE WALL	2	$218.00	$436.00
475438	LPM	MIC PUSH-TO-TALK CAMERAMAN	8	$470.00	$3,760.00
509340	MLXP30-C	CABLE 30' (9M)MIC EXT FOR VSS LPM MICS	8	$50.00	$400.00
509334	VPC-ES	CAMERAMAN PRESENTER CAM SYS FOR ESA	1	$9,280.00	$9,280.00
473903	CWM	WALLMOUNT VTEL CAMERAMAN	1	$230.00	$230.00
507534	SMBRD-N-U/NA	BOARD SMART KIT W/WALL MOUNT NTSC VTEL	1	$5,498.00	$5,498.00
516896	SMBRD-FS	SMART BOARD FLOOR STAND	1	$799.00	$799.00
509323	PHAO	PHONE ADD-IN FOR ESA	1	$1,100.00	$1,100.00
					$73,892.59

PRICING SUMMARY

Total Equipment Price	**$73,892.59**
BICS Charges	$0.00
Service Order Charges	$0.00
Total Systems Price	**$73,892.59**

VTEL 232 System with dedicated RS-449 connection. Standard TTVN options with exception of addition with Cameraman Presenter and Electronic Whiteboard.

Customer-NE
Updated by: 0

Prepared By: Dennis R. Cook
Date of Quote: 08/29/97

PRICING IS VALID FOR ONLY 45 DAYS FROM QUOTE DATE

IICA Video Server
MCU pricing
Attachment 1A

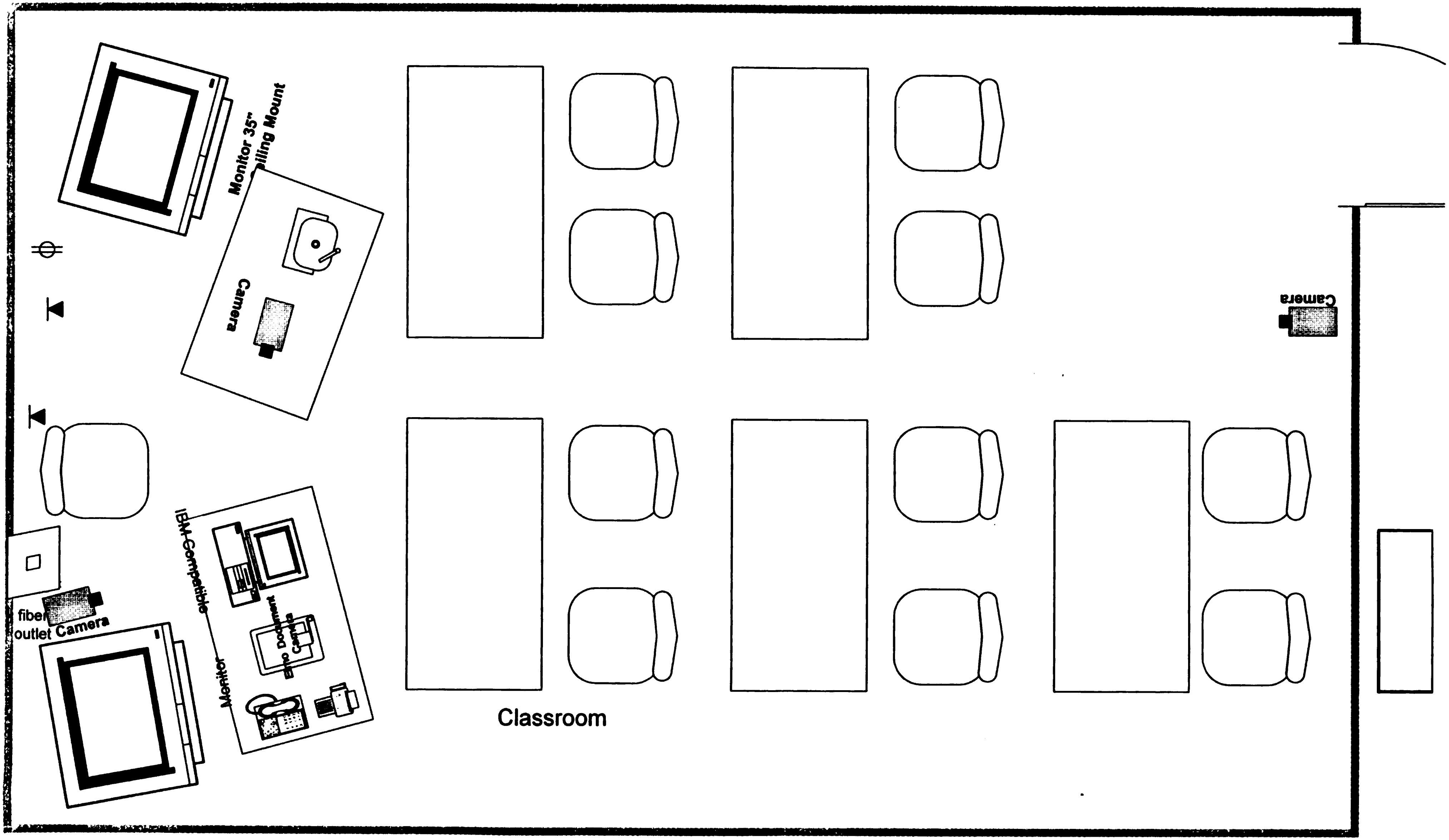
Description	Part Number	Qty	Unit cost	Extended cost
18 Slot Video Server MCU	SL-BS-2020-R	1	$ 51,637.50	$ 51,637.50
Option 50 MHz BPU2/OR ACM	SL-2205	2	$ 11,475.00	$ 22,950.00
Dual V.35/RS-449	SL-2110	1	$ 2,065.50	$ 2,065.50
RS-449 DTE male cable	SL-2905	1	$ 150.00	$ 150.00
4 port ISDN BRI interface	SL-2111	2	$ 3,672.00	$ 7,344.00
MCS Workstation Lisc	SL-3110	1	$ 459.00	$ 459.00
Imux - Software	SL-2130	1	$ 7,344.00	$ 7,344.00
Imux-Manager	SL-3050	1	$ 765.00	$ 765.00
VPU- Continuous Pres.	SL-2305	1	$ 18,810.00	$ 18,810.00
Continuous Pres Software	SL-3305	1	$ 3,600.00	$ 3,600.00
Collaborates	Pending	1	$ 3,600.00	$ 3,600.00
Rack Mount rails`	SL-0301-26	1	$ 175.00	$ 175.00
				$ 118,900.00

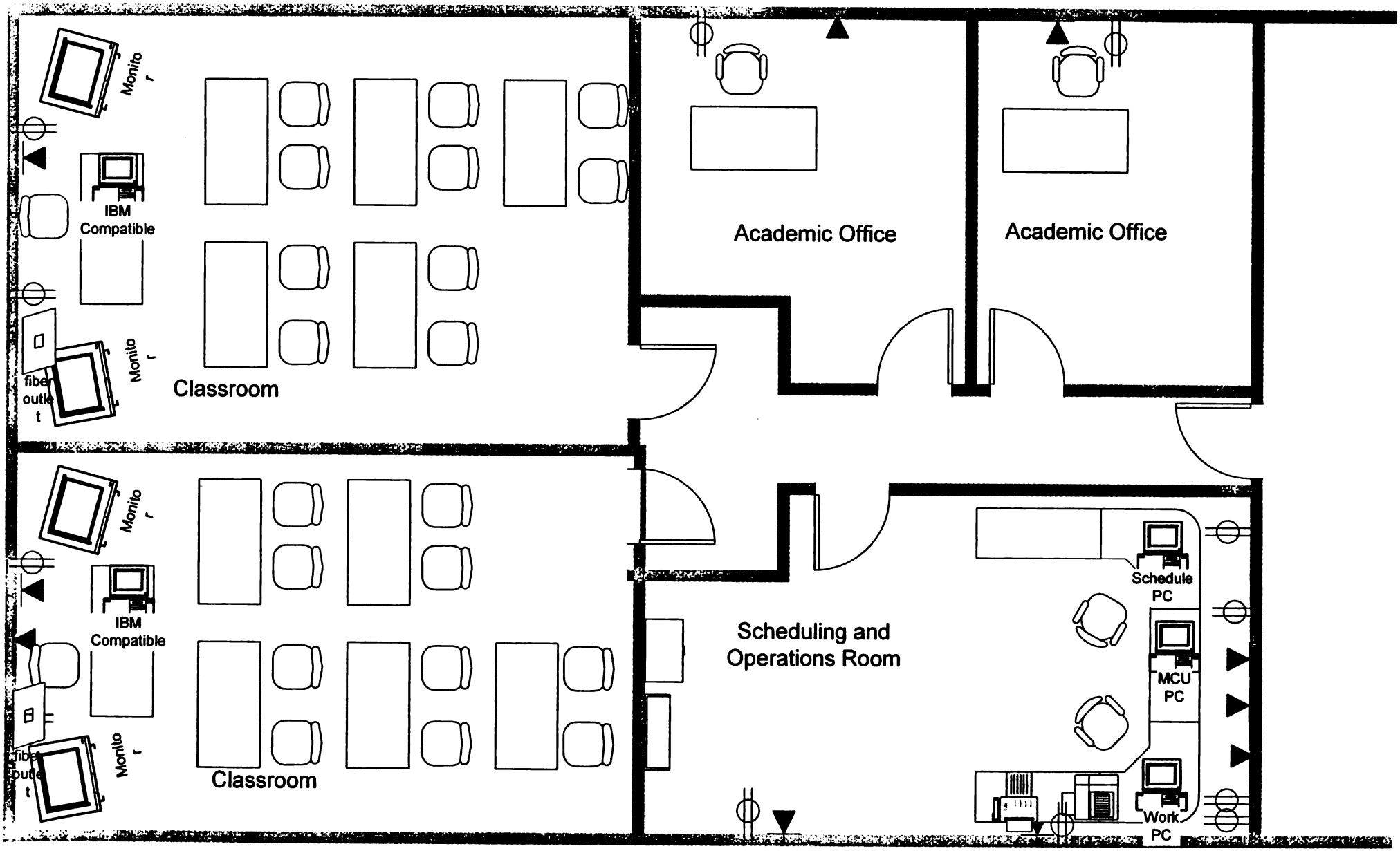
PC computers for administrative functions
And operations center for *IICA* – Costa Rica
Attachment 1B

There are going to be five computers located in the operations center, distance education administrative office and distance education classroom. They have the following specifications.

Intel Tuscon 512K ATX BOX
16 Meg EDO memory
TEAC 1.44M 3.5" drive
2.1Gig Caviar drive
Diamond 3D video board
Samsung 700S monitor
Inwin ATX supermini tower
NMB keyboard
Microsoft mouse
USR Sport 33.6 modem
CD-ROM drive 16X
3Com ethernet card
Microsoft Windows 95
Microsoft Windows 95 office suite
Intel Pentium 166 with fan
Yamaha M15 10 watt speakers
Triplite surge protector

$1,882.00 ea	$9,410.00
Hewlett Packard 5Si printer	$2,376.00
Ethernet repeater	
3Com 24 port	$1,000.00
UPS for operations center	
3.1 KVa Best 2 hour Part # FE3.1KDDEAGDG	$4,600.00
Total	**$17,386.00**


Monitor 35"
Ceiling Mount
Camera
Camera
IBM Compatible
Monitor
Elmo Document Camera
fiber outlet
Camera
Classroom



IICA
Scale 3/16"=1'
Distance Education
Center

IICA Functional Room Requirements

Classrooms (two each)

Classrooms must be as sound proof as possible.
- Either surface wall treatment on walls or insulation in walls
- Suspended ceilings
- Carpet on floors

One dedicated 20 amp 110 VAC duplex outlet in front of each classroom.

One pair of multimode fiber optic cable from front of classroom to computer center.

Sufficient Air conditioning

Two telephone lines (one phone one fax)

One 10BaseT ethernet connection via CatV wire to appropriate hub.

Distance Education Academic Offices (two each)

One dedicated 20 amp 110 VAC circuit shared between the two offices.

One telephone line.

One 10BaseT ethernet connection via CatV wire to appropriate hub.

Scheduling and Operations.

Two dedicated 20 amp 110 VAC circuits.

Four telephone lines (two telephone, one fax and one MCU control circuit).

Three 10BaseT ethernet connections via CatV wire to appropriate hub.

General Notes:

This is the minimum requirements. Additional requirements such as AC outlets may be added for general use.

It is desired that the wall between the two classrooms be removable.

Attachment 5

RECOMMENDATIONS FOR NETWORK MANAGEMENT OF IICA VIDEOCONFERENCE NETWORK

As IICA begins planning the purchase of equipment to build a videoconference network they should also plan for daily management needs and procedures of the network. Areas of importance are detailed within this section with recommended procedures to facilitate each.

I. Scheduling

Scheduling is an important component of network management. Accurately scheduled connections serve as the basis for a functional network. The most important issue involved in successfully planning connections is the authority of the central scheduling personnel to have the ability to control from schedules for all remote sites.

For ease of network use and to allow for proactive network management it is recommended that all scheduling of connections on the IICA network be coordinated with the primary network operations center (NOC) located at IICA headquarters in San Jose, Costa Rica. This will require the NOC to provide users access to their personnel by telephone, fax, and e-mail. The NOC will take information necessary to schedule a conference which may include such items as conference date, conference start and end time, name of conference requester, requester phone or fax number or e-mail address, and video \conference sites to be involved in the connection. Upon receiving all required information the NOC will be responsible for scheduling the conference and notifying site contacts at the involved sites of room, equipment, and personnel requirements. This process presupposed that IICA NOC will have complete authority to schedule all rooms with videoconference equipment of their network. It will be the responsibility of the remote site to inform the NOC of any non-videoconference events scheduled in the rooms to assure that no conflicts arise. In the event of a conflict priority will be given to videoconnections.

II. Scheduling Software

Due to IICA's goal of network development over the next five years it is recommended that the NOC begin their scheduling operations with a computerized scheduling software program that will allow them to grow at the planned rate without requiring a change of software or computer platforms. the videoconference scheduling software that will work best with the IICA network is produced by A C and E Corporation and is named VCWizard (VCW).

VCW provides for scheduling of rooms, equipment and personnel via a Windows based graphical user interface. This system notifies users of scheduling conflicts or incompatibilities as well as generates and delivers notifications by facsimile or electronic mail. In addition it is also possible to create customized reports using this system for historical reference, planned usage, and billing requirements.

In addition, the use of VCW allows for automated control of network bridging equipment to automate connection and disconnection of conference. Network controller can manually override computer operation if necessary for last minute changes.

Scheduling on VCW can be done in many ways. Ideally it would be done at a central location, but there is the possibility of providing client versions of the software allowing remote sites access to database information The system administrator has the ability set access and security levels on each individual person with software access.

VCW for the past two years has been used by TTVN which is the Texas based network that IICA plant to connect with for this project. By using the same scheduling software TTVN operational support can also be provided in the setting up of reports and database entries as well as troubleshooting assistance if necessary.

III. Connections

All videoconnections that involve three or more sites, require access to sites on the TTVN network, or sites that are dedicated on the IICA network must connect through the IICA NOC due to network design. This allows for accurate reporting of video network usage. Any connection made by a site on the network but not requiring MCU access should also be scheduled with the NOC for inclusion in all network reports.

To insure that users are able to successfully videoconference it is advised that IICA should provide site personnel to be present at the beginning of each connection. This person should function as described in Section IV. On-Site Assistance.

IV. On-Site Assistance

User assistance provided by on-site personnel must be mandatory. At a minimum on site personnel should be expected to perform the tasks listed below:

- Coordination of videoconference room schedule with IICA NOC.
- Provide training on equipment and material development for users as required.
- Attend the beginning of each connection to assure that calls are successfully established.
- Be readily available to users during a connection if assistance is needed.
- Have basic technical knowledge to troubleshoot equipment if problem occurs during call.
- Insure that calls are disconnected and equipment has been properly shut down.
- Cooperate with NOC to test equipment and assist with maintenance as needed.

Each site might choose to include additional duties as desired. By adhering to the duties listed here the site contact will help to increase equipment reliability and connection success rate.

V. User Assistance

the IICA NOC will provide a help desk via telephone that will be staffed and available to users for the duration of all connections. Technical assistance will be provided to users for equipment that is recognized as standard in an IICA videoconference room Site specific equipment must be supported by on-site personnel.

Problems that are not resolved in the course of the telephone conversation will be escalated to the appropriate maintenance routes according to agreement with site. IICA NOC will keep site posted of repair process for all repairs requiring more than 24 hours.

VI. Reporting

IICA Network Management group will be responsible for tracking all connections to the network. As required by the Director General of IICA these reports will be made available to show network and equipment usage history or other specific areas as required.

VII. Training

IICA Network Management will made available periodic training session to all on-site personnel in areas such as equipment operation, troubleshooting, material development, etc. On-site personnel will then be responsible for distributing this information to their users as required.

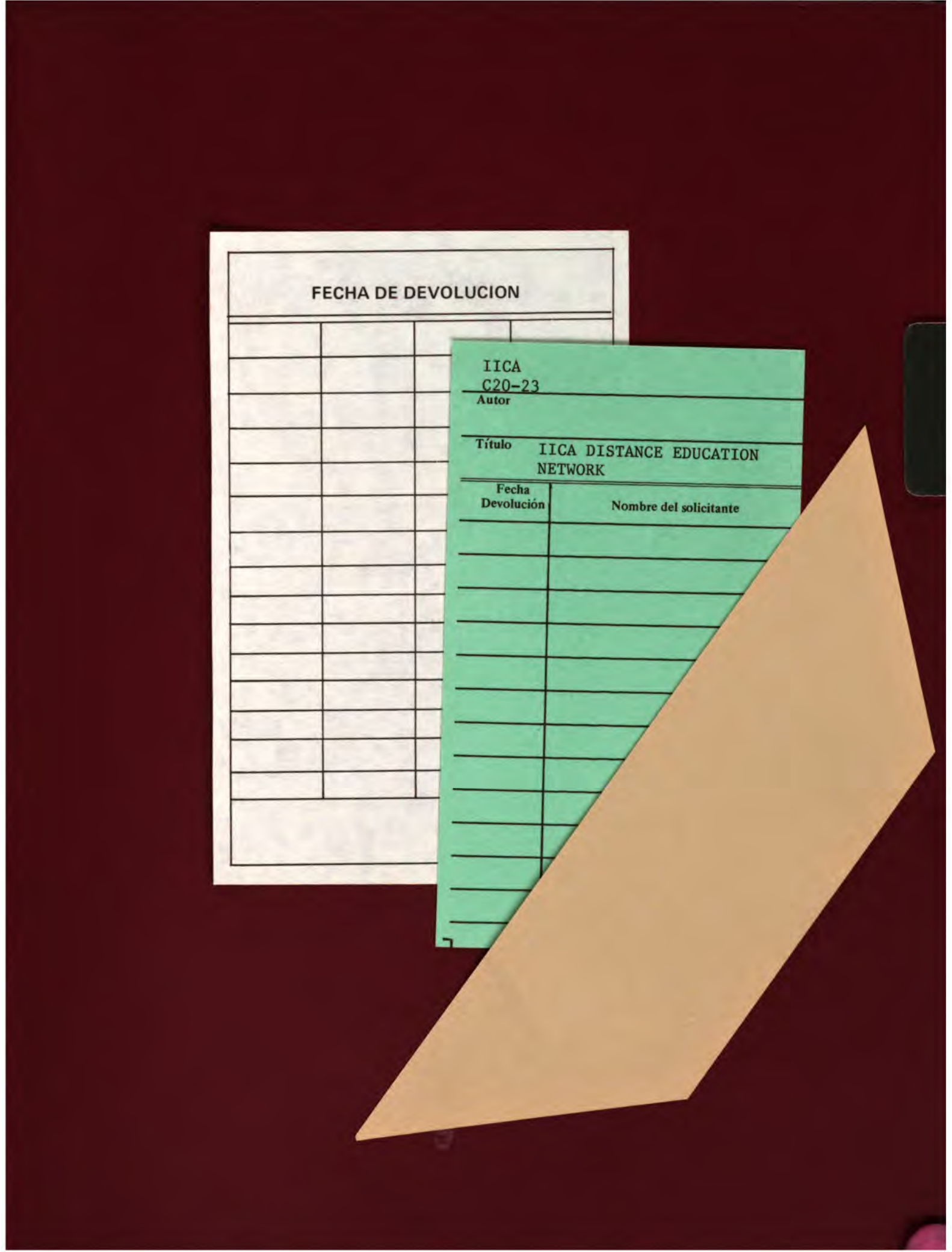
VCWizard Information:

VCW is an English only program, but is presently being sold directly through AC and E to areas in Latin America. The following are estimated costs per a conversation with Bill Combs, Vice-President of the company. Also, the VideoServer MCU must have a conference Talk API card to be controlled by VCW.

$13,000	Client server software
$ 6,000	VideoServer/MCU driver
$ 2,000	4 client licenses
$???	Access 2.0 or Crystal reports for reporting functions
20% of software	Cost for extended maintenance (month 4 thru month X)

Server requirements:
Pentium 166 or better
40M free disk space
16M RAM (32 recommended)
Windows 95
SVGA monitor - 17j
Board to connect with LAN
(AC and E can provide already installed on server. They would use a Dell and add approximately $2500 to the overall cost. I would strongly recommend that we purchase our own and go above minimum requirements whenever possible.)

AC and E can install on-site for $1,000 per day plus travel costs and per diem. Installation would be a minimum of 2 days.


FECHA DE DEVOLUCION
IICA
C20-23
Autor
Título
IICA DISTANCE EDUCATION NETWORK
Fecha Devolución
Nombre del solicitante