

## Chapter 15

### SAHAKARA PRAGATI PROJECT OF APCOB, ANDHRA PRADESH

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#### I) OVERVIEW

The main objective of this project is to provide Basic and Business Enablement Services to **Primary Agricultural Cooperative Societies (“PACS”)** and transform them into rural hubs providing cost effective services to the farmers / rural citizens of Andhra Pradesh at their door step. The project aims at building a rural retail delivery channel spread across the state of Andhra Pradesh with a ultimate reach to about **4 Crore** rural citizens.

The broad economic agenda of the Project is as follows:

- Mechanisms for Cooperative credit structures for greater reach and credit flow;
- Business linkages for various institutions to offer wide ranging products and services at low cost, which as of date are partly and / or completely unavailable to the members of the PACS; and
- Strengthen PACS through convergent business models in creating a market to meet the demand and supply of the members of the PACS.

The project achieves the following objectives for the PACS to implement the above agenda:

- Enable new businesses and revenue generation for / with PACS and bring about the transformation
- Enable various stakeholders such as the state government, NABARD, APCOB, DCCBs, to monitor the health and facilitate transformation
- Offer “Multiple products & services” to the farmer at the PACS through a state-wide IT enabled services delivery network.
- Provide “A technology platform” for financial & commodity players to transact directly with the farmer and move PACS into the market economy

The principal stakeholders in the project are the government of Andhra Pradesh (Cooperation Department), Andhra Pradesh State Cooperative Bank (“APCOB”), 22 District Cooperative Credit Banks and 2,748 PACS. The rollout status of the project is as follows:

Phase	No of PACS	Districts	Duration	Status	Expected Date of Completion
1	640	20	12 months	Completed	Completed
2	1250	22	12 - 18 months	To be initiated	June 2011
3	858	22	12 - 24 months	To be initiated	December 2011

The Government of AP, vide GO Ms. No. 458 Agriculture and Cooperation department dated [20.11.2008](#) ("Final GO) approved the proposal for transformation of PACS to IT enabled financial inclusion through M/s **CoOptions Technologies Limited** (<http://www.cooptionstech.com>), referred as **CoOptions**, on revenue sharing model. The **APCOB(Andhra Pradesh State Cooperative Bank)** has to facilitate the implementation of the same across all PACS in Andhra Pradesh.

## II) RESULT INDICATORS

### 1. Key Performance

#### a. Stakeholder services and benefits achieved through ICT interventions

The important stakeholders in this project and their roles at a high level are provided below:

Name of the Stake Holder	Role of the Stakeholder
Government of Andhra Pradesh	Facilitation and Arbitration
Andhra Pradesh State Cooperative Bank (APCOB), State level	Facilitation and Enablement
DCCB s ( 22 Districts), District level	Facilitation and Monitoring
PACS (2748 Numbers), village level	Execution
CoOptions Technologies Limited (Technology Service provider)	Infrastructure, Technology, Investments, Business Linkages, Capacity Building

### The Stakeholder services are as follows:

#### A. Institutions like NABARD, RCS, Ministry of Finance and Cooperation :

- Revitalize the sector
- Reliable data for better Policy and Decision
- Automatic reporting by the societies which is timely
- Improved eligibility for re-finance from Financial Institutions such as NABARD

- Seamless integration of the credit system across the tiers
- Improved monitoring and control

**B. Governance structure provides the following :**

- Establishment of State level Farmers' Information repository
- Access to information on almost all aspects of the rural segment
- Government being aware of the percolation of benefits to the ultimate beneficiary - Farmer
- Government having Grass Root level data on Developmental processes

**C. Farmer avails the following:**

- Direct Citizen Interaction
- Empowerment
- Transparency
- Speed
- Ease in getting production and investment credit
- Access to information online
- Increased accountability

**D. Village has access to:**

- Nodal center for information dissemination
- Hub of learning
- Conduit for other developmental processes
- Convergence of information technology and rural markets

**E. PACS as an Enterprise demonstrates:**

- Ease of functioning
- Timely and speedy delivery of services
- Improved efficiency
- Provides means for authentic, accurate and timely information
- Monitoring of both loaning and recovery cycles
- Standardization of Systems and Procedures

**Benefits through ICT Interventions:**

**A. To the Farmer :**

- Funds in time
- More system driven than person oriented
- A single window for all processes ( LT,ST,MT and other)
- Reliable, Current, Correct and Transparent accounting of Loans - Interest Computations, Shares - Transfers, Deposits - Payments
- Access to other allied services ( Fertilizers etc)

## **B. To the Village:**

- Information repository
  - Members ( 1.4 Crore members )
  - Land ( 91 lakh hectares )
  - Loaning ( Rs. 2000 Crs all streams )
- Technology becoming the means of delivery mechanism for all developmental processes
- A Window to the World

## **C. To the PACS – As an Enterprise:**

- Improved Viability and Profitability
- Offering timely service to the members ( < 1 wk)
- Release of Staff time for better supervision
- Timely demand generation & increased recovery ( Automatic, < 1week)
- Increased lending potential ( Up by 10% )
- Monitoring over-dues and NPA ( NPA down to 15% )
- Ease of Conversions, Interest Computations & recovery
- Identification & Stoppage of Income leaks
- Streamlining the Systems and Practices

## **D. To the Governance Structure (DCCB, APCOB) :**

- A Comprehensive Coverage of About 25,000 Villages
- **Farmer Information System** - On-line Information about the Household of the Farmer - 5 Crore reach
- A Reach of about 91 lakh Hectares of land use
- Effective monitoring of annual agricultural credit flow of around Rs. 5000 crores thru State single window mechanism.
- First State to use IT for the betterment of the Rural community

### *b. % of services covered as ICT interventions*

The following Services have been rendered to the PACS as a part of ICT interventions as well as business enablement. These services have been rendered in full in the Phase 1 PACS as indicated above. Since the project is executed over a period of 2 to 3 years, the services will be rendered to all the PACS, as the project implementation progresses to all the PACS.

Each of the service mentioned below is executed in full. All the services mentioned below are executed at 100% completion, at the PACS where implementation is completed.

**Basic Services:****Infrastructure:**

- Establish IT infrastructure in the PACS (close to 2750 Hubs across the state)
- Establish a Data center one for each district (22 District centers)
- Infrastructure includes Computing environment, Printers, Modems, UPS, System software

**Current Status:**

- IT infrastructure has been installed in 650 PACS in 21 districts.
- Data center centers have been established in 22 districts.

**Information Services:**

- Digitize the back data of the PACS by Data Entry, Capture, Compilation
- Provide checklists to the PACS for Data Verification, Validation
- Create Database backups / Database management
- Aggregate data at the district level Data warehouse

**Current Status:**

- Digitization, Verification and Validation of data in 650 PACS is completed, covering 25 LACS of farmer profiles.
- Digitization of Phase 2 PACS has commenced.

**Training Services:**

- Provide Awareness, Product Usage and Installation and Administration training for 2 members / PACS for duration of 7 days followed by on-the-job training during the implementation phase.

**Current Status:**

- Training Services have been completed for all the Phase 1 PACS – 1100 Staff members from 500 PACS have been provided with Training.

**Implementation Services:**

- Provide on-site Handholding support for a maximum period of 3 months from the time the data is integrated into the product.

**Current Status:**

- Handholding support is in progress in all the Phase 1 PACS.

**Product Services:**

- Deploy the application software product Pax@2002 micro-ERP for PACS along with CAS and MIS as per NABARD guidelines for each PACS

- Deploy the PaxPlatform for Financial Inclusion and global business linkages
- Provide the Pax Data capture tools for data integration

**Current Status:**

- All services mentioned as a part of Product Services have been completed for Phase 1 PACS.

**Maintenance Services:**

- Provide maintenance support for the IT infrastructure for the Term
- Provide monthly data backup maintenance support at the District center for the Term

**Current Status:**

Maintenance Services are in progress.

**Business Enablement Services:**

The indicative list of business enablement services that will be implemented through the PACS are provided below.

**Financial Services**

- Banking ( Loans & Deposits)
- Insurance ( Life , Non-life)
- Mutual Funds
- Fund transfers
- Any other service that enhances the financial activity

**Agriculture Services**

- Input procurement ( Seeds, Fertilizer, Nutrients, pesticide)
- Output procurement
- Food processing and value addition services
- Commodity exchange and futures trading services
- Extension learning service

**Payment Services**

- Water, Electricity and any other payments

**Government Services**

- Benefit payments ( NREGP, Pension schemes)
- Certificates ( Local, Land etc)

**Infrastructure services**

- Land and Building development services
- Warehouse development services
- Cold storage chains development services

- Solar energy and non-conventional energy development

#### Other Services

- Educational services ( skill enhancement courses)
- Advertisement services
- Data mining and rural survey allied services
- Health services ( Diagnostic and pharmacy)
- Telecom extension / sales/ marketing services

The above mentioned list is merely representative. Any other business enablement service could be offered by CoOptions Technologies Limited based on the requirement to the citizens and commercial viability of the service and at the request of PACS.

#### c. Geographical Spread in the State achieved

The Project involves computerization of the PACS in the entire state of Andhra Pradesh. In the Phase 1 of the project itself, a geographic spread of the entire state has been achieved.

The total geographic spread of the project, phase-wise is as follows:

S.No	District Name	Total No of PACS	Phase-I Rollout PACS	Phase - II Roll Out PACS – June 2011	Phase - III Roll Out PACS – December 2011
<b>Telangana Region</b>					
1	Nizamabad	140	74	0	66
2	Karimnagar	127	38	49	40
3	Mahabubnagar	72	11	36	25
4	Ranga Reddy	49	26	0	23
5	Nalgonda	107	26	57	24
6	Sanga Reddy (Medak)	67	15	37	15
7	Adilabad	60	22	18	20
8	Warangal	69	16	33	20
<b>Total</b>		<b>691</b>	<b>228</b>	<b>230</b>	<b>233</b>
<b>Andhra Region</b>					
1	Vishakapatnam	98	29	39	30
2	Vizianagaram	94	22	42	30
3	Srikakulam	49	22	0	27
4	Krishna	425	69	356	0
5	Guntur	167	32	105	30
6	East Godavari	293	41	182	70
7	Khammam	105	24	55	26

8	West Godavari	265	50	215	0
<b>Total</b>		<b>1496</b>	<b>289</b>	<b>994</b>	<b>213</b>
<b>Rayalaseema Region</b>					
1	Chittoor	76	57	0	19
2	Nellore	79	25	29	25
3	Kadapa	62	12	30	20
4	Kurnool	95	24	51	20
5	Ananthapur	98	23	55	20
<b>Total</b>		<b>410</b>	<b>141</b>	<b>165</b>	<b>104</b>
			<b>658</b>	<b>1389</b>	<b>550</b>

**Balance 151 PACS will also be covered in Phase III.**

## **2. Efficiency improvement**

*a. Time saving / improvements in the delivering the above set of services.*

<b>Service</b>	<b>Response Time</b>
Machine Uptime	Minimum of 4 hours a day
Machine Availability	22 days out of 24 working days of the month
Response to machine maintenance	Replace / Repair within 48 hours from time of request
Response to Application crash	Retrieve within 48 hours from time of request
Response to bug fixing	72 to 96 hours from time of reporting the bug
Response time for report generation	Aggregated reports – 24 to 48 hours, Individual reports - within 24 hours
Response time for enhancements to application	As per the Version release plan
Response time for new report requirements	5 days from the time new report is requested
Response time for the presence of an onsite service engineer	24 hours from time requested.

The above Service Level Agreements (SLA) have allowed the PACS to provide efficient services. The quantified improvements achieved in terms of service delivery from PACS to Farmers in offering Basic Services are given below. These improvements are quantified relative to services offered by a PACS that is not IT enabled.



- Improved Viability and Profitability ( 192% increase)
- Offering timely service to the members ( < 1 wk)
- Release of Staff time for better supervision ( 55% free)
- Timely demand generation & increased recovery ( Automatic, < 1week)
- Increased lending potential ( Up by 10% )
- Monitoring over-dues and NPA ( NPA down to 15% )
- Ease of Conversions, Interest Computations & recovery
- Identification & Stoppage of Income leaks
- Streamlining the Systems and Practices

*b. Cost savings for delivering above set of services.*

The Government of Andhra Pradesh does not incur any cost in the delivery of the above services in the Project. Co Options will be investing upto an amount Rs. 80.00 Cr (Rupees eighty crores only) and there will be no investment from the PACS, DCCBs or the APCOB in this regard. CoOptions has already made and will continue to make significant investments in developing software and solutions, establishing business linkages and also building relationships with various vendors and intermediaries. CoOptions shall bear the burden of any increase in costs and expenses and the benefit of any reduction in the same.

*c. Time Saving for availing these services*

S.No	Description	Metrics
1	Audit	Automated audit reports, audits for last two financial years in place with a real-time provisional balance sheet
2	Service level indicators <ul style="list-style-type: none"> <li>• Customer cycle time</li> <li>• Employee relief time</li> <li>• Audit cycle</li> <li>• Demand generation</li> <li>• MIS and reporting</li> <li>• Leakages and non-adherence to accounting</li> <li>• Adherence to accounting standards</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced from 6 weeks to 4 days</li> <li>• 55% relief time provided</li> <li>• Reduced from 6 weeks to 10 days</li> <li>• Reduced from 3 weeks to 5 minutes</li> <li>• Currently real-time compared to 3-5 weeks earlier</li> <li>• Currently zero compared to nearly 5% earlier</li> <li>• 100% compliance</li> </ul>
3	Third party validation	<ul style="list-style-type: none"> <li>• Evaluated by Andhra Pradesh Technology Services Ltd and rated at 97% service levels</li> </ul>

		<ul style="list-style-type: none"> <li>• NCDC found the product closest to the requirements across the country</li> <li>• Evaluated by VeriSign, USA on data and transaction security parameters</li> </ul>
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*d. Cost Saving for availing these services*

The farmers will be availing the services from the PACS. The operational efficiency of the PACS has increased multifold with the introduction of computerization. The DCCBs and APCOB have observed a significant improvement in terms of farmers availing multiple services with no increase manpower or putting any extra effort. The computerization has improved the efficiency, productivity and effectiveness of the PACS. The cost savings were experienced in terms of increased productivity of PACS without any increase in spending, or reduction in their profitability. The following table provides the details, in which a survey of 147 PACS was conducted, which were computerized as a part of the pilot project by CoOptions.

Description	PACS with computerization			PACS without computerization		
	Before 31.03.20 02	After 31.03.20 06	Growth Rate	31.03.200 2	31.03.200 6	Growth Rate
Number of PACS	147	147		23	23	
Number of borrowers	70,000	1,63,000	<b>170%</b>	19,980	21,556	<b>8%</b>
Borrowings (Rs. crore)	109.22	215.64	<b>97%</b>	36.47	42.77	<b>17%</b>
Income from other businesses (Rs. crore)	0.28	19.65	<b>6723%</b>	5.67	5.38	<b>-6%</b>
Average turnover (Credit +Deposit +Trade) (Rs. crore)	0.93	1.90	<b>104%</b>	2.06	2.74	<b>33%</b>

### III) ENABLER INDICATORS

#### 1. Processes

##### a. Major front end process changes and implemented

The Sahakara Pragathi project involves the implementation of the ERP Solution Pax@2002 at the PACS. From an enterprise perspective, the computerization brings about the following changes at PACS:

- a. The business of the PACS is conducted with a computer across the cash counter of the PACS.
- b. The functions related to customer inquiries related to account information; balance information, banking functions, etc. are all executed from the computer system across the counter.
- c. The MIS reports for daily running of business – provisional balance sheets, customer related information, printing of receipts, vouchers, etc. is done from the computer by the PACS CEO.
- d. The following significant process changes are implemented as a part of the Project
  - **Single window** for Cooperative Credit modules like ST, MT and LT Loans
  - Access to *maximum granularity* of data
  - Data transfer to DCCBs and SCOBs
  - Conversions, re-phasing, re-scheduling, postponement of Loans
  - *What if Analysis* for repayment and investment
  - Report generation- *Tailor made*, Statutory, Statistical, Financial and MIS
  - Adherence to *NABARD guidelines*
  - *Integrated* system with automatic updates into Financial Accounting System
  - Automatic advice generation
  - *Multiple modes of adjustments* & interest computations
  - Automatic demand note generation
  - Automatic Voucher posting
  - Automatic Interest posting
  - Automatic Alerts on stocks and expiry date alerts for Fertilizers in Trading Modules.
  - Adherence to CAS (Common Accounting Standard) and MIS (Management Information System) as per NABARD guidelines.

*b. Major back end process changes and implemented*

The Sahakara Pragathi project involves the implementation of the ERP Solution Pax@2002 at the PACS, which not only computerizes all the business processes of the PACS but also provides an easier and better way of facilitating process adoption and training.

The ERP Solution Pax@2002 brings about the following special features, which are instrumental in the process adoption, process re-engineering, change management and process enablement:

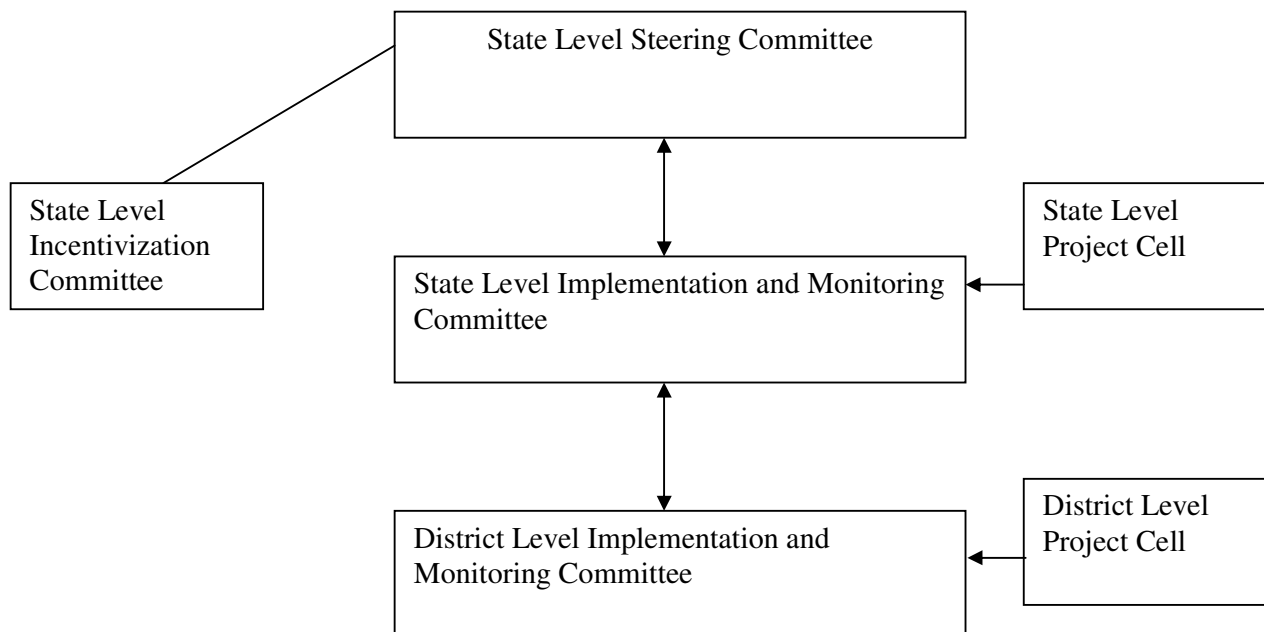
- Streamline the operations of the PACS at the grass root level by providing a single window of services for Credit and Banking.
- Bring in standard business processes and practices.
- Increase efficiencies and reduce inherent delays.
- Facilitate in integrating a wide range of service delivery.
- Bring in transparency and accountability.
- Support in establishing micro to macro MIS for governance.
- Monitor, determine and prevent leakage and imbalances in the system.
- Facilitate operation of CAS and MIS prescribed by NABARD

The Pax@2002 encapsulates and aggregates the combined wisdom and maturity of the Business Processes of the PACS, in accordance with the monitoring guidelines of the RCS, NABARD, DCCB and APCOB. For the sake of process improvement and process adoption, many business processes have been re-engineered for ease of use and understanding of the end-users, the Secretaries of the PACS

## 2. *People and Resources*

### a. *Project management & Monitoring – Full time team in place*

#### **Project Monitoring Structure for the Sahakara Pragathi Project**



### b. *Achievements of training of internal & external members on the new system*

Training and Capacity building is an integral part of the Sahakara Pragathi Project. The training is provided not only in the computerized solution (Pax@2002 Software), but also on different aspects of the business processes, that are inbuilt in the solution. The training is provided in 2 stages:

- Class room training for a period of 5 days to the Secretaries / CEO s of the PACS on the functional features and usages of the PAX@2002 software
- Onsite Handholding support for a period of 3 months, at the PACS, with the deployment of a dedicated resource to assist the PACS CEO in transitioning from the manual system to a computerized system of administering business.

The following are the details of training provided to internal and external members of the system, in this project.

- Awareness Programs for Presidents
- Awareness Programs for CEO s
- Classroom Training Program for CEO s
- Handholding Support Programs for CEO s at PACS location
- Study Tours for Presidents and CEO s of PACS
- Capacity building and Training Programs for Staff members of CoOptions to facilitate support for PACS staff

### **3. Technology**

#### *a. Disaster Recovery & business continuity plan defined & implemented*

The following measures are also adopted in the direction of achieving security, availability and integrity.

- Disaster Recovery and Business Continuity Process
- Protection of Database
- Protection of Executables
- Protection of system files and Protection against viruses
- Protection against Theft of computers and accessories
- Technological solution cost effective and maintenance over time

#### **Product and Maintenance Services:**

- Deploy the application software product Pax@2002 micro-ERP for PACS along with CAS and MIS as per NABARD guidelines for each PACS
- Deploy the PaxPlatform for Financial Inclusion and global business linkages
- Provide the Pax Data capture tools for data integration
- Provide maintenance support for the IT infrastructure for the Term
- Provide monthly data backup maintenance support at the District center for the Term

*b. Technological solution cost effective and maintenance over time*

### **IT Infrastructure**

- Any additional Hardware for the computerization of the current business activities of the PACS, if required, over and above the configuration provided in Annexure A – Part C, shall be provided to the PACS by CoOptions as per the prevailing market price to be paid by the PACS on a case to case basis.

### **Product**

- Additional requirements are seen at two levels:
  - a. State-wide requirement of a new module: The module shall be developed for the entire state on a mutually agreed commercial terms based on the man month effort and recommendation by the Change control process
  - b. PACS specific: Additional application modules at any PACS specific to that PACS over and above , the current product scope if required, shall be developed and charged a one time nominal fee on a per module per PACS basis or a monthly payment per module per PACS for the tenure of the contract.

### **MIS**

- Additional MIS required to the DCCB over and above the reports specified by NABARD as per Annexure C, if required, shall be developed on mutually agreed upon commercial terms with APCOB as the nodal agency
- Additional MIS required to the APCOB, Department of Cooperation and RCS if requires, shall be developed on mutually agreed upon commercial terms with APCOB as the nodal agency

### **Training**

- Additional training resource personnel, shall be provided to the staff of PACS free of cost to a maximum of 10 working days in a quarter where all the other training facilities are provided by APCOB / DCCB. The additional training is specific to Basic services provided.
- Any training related to the verticals and refreshers for their new businesses would be provided by CoOptions as a part of business development exclusive of the PACS computerization training as per the business providers' requirements.

### **Implementation**

- Implementation support over and above the three month free implementation support and data with a CoOptions person on-site for parallel live runs if required, shall be provided to the PACS , at a cost based on the verification and certification of the District Level Implementation and Monitoring Committee.

### **Day-to-day operations support of the PACS**

- Additional day-to-day operations support to the PACS for entering the transactions, daily data backups, printing reports etc with a dedicated resource at the PACS if required, shall be provided at a commensurate per month per PACS.

### **Consulting and Capacity building of the PACS**

- Consulting on business processes for the current businesses of the PACS and activities associated with Capacity building, training, extension and best practices shall be extended to PACS if required on mutually agreed upon commercial terms of association .

#### *c. Security and confidentiality standards defined and implemented*

The Security architecture of the solutions conforms to the following guidelines of the BS 7799

- Asset classification and control - To help you identify your assets and appropriately protect them
- Organization of assets and resources - To help you manage information security within the organization
- Access control - To control access to information
- Systems development and maintenance - To ensure that security is built into information systems
- Business continuity management - To counteract interruptions to business activities and to protect critical business processes from the effects of major failures or disasters
- Compliance - To avoid breaches of any criminal and civil law, statutory, regulatory or contractual obligations, and any security requirement

This apart, Security Architecture of the Solution Pax@2002 provides complete security for the application systems registered under architecture. The Security architecture is designed to provide the following features and services.

- License Manager: The objective is to protect all components through licenses and strictly illegal usage of components.
- User Manager: The objective is to support both Windows based authentication as well as custom application based authentication. This component would allow definition of users for the application.
- Role Manager: The objective is to provide role based security. Permissions can be applied the roles and would get inherited to the users under the specified role.

- Access Manager: Provides services for securing various resources of applications viz. user tasks, form controls etc. based on the user credentials.

The Security architecture of the Pax@2002 is built on the Microsoft .NET Security Framework. The security framework of Pax@2002 provides

- authentication
- authorization
- cryptographic routines
- Secure web services
- Security policy administration and deployment
- Protect private data from Cryptography name spaces of the .NET framework
- Unify role based security models for Enterprise and application domains
- Track and report virus attacks

The compliance of the Security Architecture is proven by the Certification of the Product Pax@2002 by "Veri Test" in the Microsoft Windows .NET logo program. The Solution Pax@2002 has been verified by Verisign for Windows 2003 Server and downward.

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