Year 2000 Preparations in
the Banking and Financial Sector

An Update
(Upto May 1999)

Department of Information Technology
Reserve Bank of India

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CONTENTS

Foreword

The Monograph 'Year 2000 Preparations in the Banking and Financial Sector' brought out by the Reserve Bank of India in December 1998 discussed, among others, the broad strategy adopted by the Reserve Bank in periodically monitoring and overseeing the progress made by the financial sector in achieving Y2K compliance by the end of November 1998. This is an update on the subject as available to the Reserve Bank of India till the end of May 1999.

The Reserve Bank of India has been undertaking number of initiatives for Year 2000 compliance of the Banking and Financial Sectors. The focus now is not so much on awareness, remediation, testing and implementation, but on the need for business continuity planning. This involves continued testing of the systems and preparation of detailed Contingency Plans and their testing in simulated environment. Group meetings of public sector, private sector, urban cooperative banks and financial institutions were arranged periodically to review the progress at different levels.

The Reserve Bank of India continued to coordinate with the Indian Banks' Association, Associations of Trade, Commerce and Industry, SEBI, insurance, power, telecom and transport sectors in addition to reviews on Y2K taken by the Committee of Secretaries under the Cabinet Secretary and Y2K Action Force under the Chairmanship of Dr. M.S. Ahluwalia, Member, Planning Commission.

We trust that this update would create better appreciation of the preparedness of the banking and financial sector on the Y2K problem and instill confidence in the minds of the public in general and customers of financial entities in particular, that the problem is surmountable in good time.

Mumbai ***(S.P. Talwar)***
June 1999 ***Deputy Governor***

1. Introduction

1.1 The Reserve Bank of India had brought out a booklet on the Year 2000 Preparations in the Banking and Financial Sector in December 1998. The booklet gave an account of the initiatives taken by the Reserve Bank and the financial sector for achieving Year 2000 compliance, in co-ordination with the Government of India, Indian Banks' Association, Associations of Trade, Commerce and Industry, Securities Exchange Board of India (SEBI), Insurance, Power, Telecom and Transport Sectors and the progress made. This is an update of the December publication covering events up to end May 1999.

1.2 A wide range of Year 2000 related risks were assessed and taken up with the management of the banks for taking action for remediation. Having adopted the definition of the British Standards Institution for Year 2000 conformity, directions were issued to banks and financial institutions for achieving Year 2000 compliance of hardware, operating system, system and application software, networking products, conversion of old data, etc. Attention of the financial sector was also drawn to the embedded sector, interface with customers, house keeping and Management Information Systems.

1.3 Monitoring Mechanism

As a part of the monitoring mechanism the Reserve Bank of India had set up a Working Group under the guidance of Deputy Governor of the Reserve Bank of India with three Executive Directors together with the in-charges of regulatory departments, the Indian Banks' Association, the National Institute of Bank Management and few commercial banks as members. The constitution of the Group and the actions initiated by it have been set out in the booklet published in December 1998. The Working Group has held four meetings after publication of the booklet. Since March 1999, the Working Group is meeting at monthly intervals to monitor the progress about Y2K compliance. Senior Government Officials of the Department of Telecommunications, Department of Electronics and Ministry of Finance are also invited to participate in the deliberations of the Working Group. As directed by the Working Group, the Y2K Project Cell set up in Department of Banking Supervision of the Reserve Bank has issued instructions to banks and financial institutions covering a broad remediation framework and deadline for compliance. In view of certain difficulties faced by the institutions as reported by them with regard to acquiring Y2K compliant hardware, updates of Y2K compliant system and application software etc., the deadline was extended to March 31, 1999. However, to impress upon the banks the need to be Y2K compliant by the end of March 1999, meetings were conducted in February 1999 chaired by the Executive Director of the Reserve Bank, with public sector banks, private sector banks, foreign banks and other co-operative banks to get first hand feed back of the compliance position of the banks and the contingency plans worked out by them.

1.4 The Department of Information Technology of the Reserve Bank of India has been monitoring the compliance efforts of Departments and Regional Offices of the Bank through a system of monthly reporting of the position of compliance by them and in meetings convened with the in-charges of Departments and Regional Offices. In order to ensure that the instructions issued have been implemented and to have on- the-spot inspection of the position of Y2K compliance, visits were made by officers of the Department of Information Technology and reports submitted to Top Management. Instructions have been issued to in-charges of all the Departments and Offices to comply with the guidelines issued by the Department of Information Technology from time to time and make all endeavors to achieve Year 2000 compliance by March 31, 1999 and report the status. Departments and Regional Offices have been advised to keep proper records of the test results for Year 2000 compliance for verification and certification by internal inspection team and the third party.

1.5 Contingency Plans

A smooth transition to Year 2000 would require preparation and testing of comprehensive Contingency Plans to minimise disruptions due to the onset of the millennium. Most institutions have Contingency Plans for computer breakdowns etc. However conventional Contingency Plans will not be adequate to deal with Year 2000 problems. The key objective of Contingency Planning would therefore involve identification of all possible risks to what is critical for business continuity and development and implementation of strategies to reduce the risks or mitigate the impact thereof. Keeping this in view, all banks and financial institutions have been advised to prepare Contingency Plans as an integral part of their Year 2000 Programme. The Boards of Directors and Senior Management of Banks and Financial Institutions are to accord high priority to the development, validation and implementation of Year 2000 Contingency Plans. They have been advised to identify a range of Year 2000 scenarios, prioritise them in terms of probability of occurrence and impact potential for business and lay down cost effective approaches to mitigate associated risks. Generic year 2000 scenarios could include a combination of the following:

- Disruption of technology based systems both within the institution as well as external interfaces and networks.
- Failure of financial telecommunication networks and infrastructure
- Failure of utilities like power, telecommunication, etc.
- Breakdown of clearing and settlement systems
- High demand for cash and liquidity
- Telecommunications breakdown(local as well as international)
- Failure of counter parties/borrowers and clients

Year 2000 Contingency Planning should be based on the premise that back-up computer systems cannot be counted to serve as a back-up as the technical structure of the back-up system is exactly the same as the active system. The banks and financial institutions have therefore been advised that their Contingency Plans should envisage business continuity through fall back on stand alone PCs and/or manual processing, if need be. Thus, banks and financial institutions have been advised to keep up-to-date printed hard copies of all important books of accounts and customers accounts etc., starting January 01, 1999 so that temporary switchover to manual procedures may be done with ease in the event of any disruption due to unforeseen problems at the turn of the century. Further, to take care of eventuality of pressure for cash by the customers, say during the latter part of this year and early part of Year 2000, they have been instructed that possible sources of liquidity would need to be identified and measures taken to ensure adequate supply of cash through the currency chests. The importance of having key personnel with the knowledge and skill to respond to particular difficulties during the roll over period and the first few months of the Year 2000 has been stressed. All the Departments and Offices of the Reserve Bank have also been advised on similar lines. They have since started confirmation on placing the contingency plans in position. The Contingency Plans have to be formulated with due approval of the respective management and should be tested and forwarded to the controlling authorities in the Reserve Bank of India.

1.6 Holiday Issue

The issue of declaring holiday on January 1, 2000 has been carefully examined by the Reserve Bank. There is little justification for a holiday on December 31, 1999 as all systems would be working normally having already been remedied and tested for Year 2000 readiness. The banks in India would work normally on December 31, 1999. As January 1, 2000 is a Saturday being a half working day for the banks, the volume of transactions would be lower than on a full working day. It is therefore felt that a live run of the systems to test their millennium compliance with lesser number of transactions is a much better option than having to perform live runs on a normal working day i.e. January 3, 2000 with full loads. In case of failure on January 1, 2000, the contingency plan would work with much less strain.

Glitches if any in the systems would become apparent during the live run on Saturday, January 1, 2000. The ensuing weekend will enable the banks to rectify the problems before they open for normal business on January 3, 2000. Live runs of the systems on Monday, January 3, 2000 with its expanded full volumes of business pose the risk of less recovery time for the banks in the event of systems failure.

2. Status in the Reserve Bank of India

2.1 The compliance status of the major computer systems used in the Bank (e.g. Banking Departments, Public Debt Offices, MICR Cheque Clearing, Establishment and Accounting, Currency Management Applications, Electronic Payments, External Investments and Operations and back office applications) is reported here as of end May 1999. The position has been monitored with Departments and Regional Offices of the Reserve Bank by its Department of Information Technology.

2.2 Departments and Offices have taken steps for replacement of 286/386 based computer systems with the latest Y2K *compliant* Pentium II computer systems. The non *Y2K Compliant* computer systems running the date sensitive applications are replaced with *Y2K Compliant* Pentium II based Computer systems at most of the Regional Offices. As regards operating systems, offices have been advised to go for *Y2K Compliant* versions of Novell NetWare 4.11, SCO UNIX 5.x.x, Windows NT 4.x, DOS 6.22 or later, Windows 95/98 and HP-UX 10.20 or 11.xx and their patches and keep abreast of the latest status by visiting the sites of the respective vendors for downloading the latest *Y2K Compliant* patches. Confirmation on putting these products in place, their testing, etc., is being obtained.

2.3 The installation of *Y2K Compliant* state-of-the-art technology IBM S/390 Mainframe Systems at National Clearing Cells at Mumbai, Chennai and New Delhi has already commenced. The new systems would be live during July-October 1999 at all the four centres. The *Y2K Compliant* input based software has been developed and tested. It is in the process of supply to Regional Offices, and the SBI and its associates, who manage clearing houses. Contingency Plans have been prepared to run input based clearing software at the four metropolitan cities in the case of MICR Cheque processing. In case this software fails, clearing settlement may be generated manually. The HP-UX 10.20, the *Y2K Compliant* versions of the operating system and *Y2K Compliant* system software have been loaded on the HP 9000 Business Servers and Banc Tec 5700 Reader/Sorters installed at Bandra-Kurla Complex, Mumbai for cheque processing. The vendor has made TPS cheque processing Application Software *Y2K Compliant* and has been tested by the Reserve Bank of India.

2.4 The Reserve Bank has started the process of third party certification of Year 2000 compliance position of hardware, operating system, system software, data base management systems, etc, in Central Office Departments and Regional Offices. It is envisaged that while certifying the Year 2000 compliant position, *Y2K Compliant* patches of requisite operating system, system software etc., if not already installed, will be installed by the third party appointed for the purpose. The Departments and Regional Offices of the Reserve Bank were late in 1998 advised to prepare and forward their Contingency Plans to take care of any eventuality resulting from changeover to the new millennium. It is seen from the plans forwarded by the Departments and Offices that necessary steps have been initiated by them to resort to paper based processing if need be by taking print-outs of books of accounts, ledgers registers starting January 1, 1999 and keep them duly updated.

2.5 Payment and Settlement Systems

2.5.1 Electronic Clearing Service (ECS) - Credit Clearing

The Electronic Clearing Service envisages substitution of paper instruments by electronic credits or debits. ECS credit clearing consists of large number of credits with a single debit as in the case of interest/dividend/commission payments by corporate bodies. The source code of ECS (Credit) Application software running on IBM 4381 mainframe at the four metropolitan cities developed using VS COBOL II has been made *Y2K Compliant*. It will be ported on the new IBM S/390 system. ECS (Credit) Application Software running on SCO UNIX 5.x.x. using MF COBOL 4.1 has also been made *Y2K Compliant*. The Y2K Application Software has been supplied to all the offices of the Reserve Bank.

2.5.2 Electronic Clearing Services (ECS) - Debit Clearing

The ECS Debit clearing facilitates settlement of multiple debits leading to a single credit over an Inter bank branch network. The source code of the ECS (Debit) on IBM 4381 mainframe of the four metropolitan cities developed using VS COBOL II has been modified for *Y2K Compliance*. It will further be ported on the new IBM S/390 system and IBM COBOL for *Y2K Compliance*. The ECS (Debit) Application Software developed in MF COBOL 4.1 on SCO UNIX 5.x.x. is also made *Y2K Compliant* and is in use at Hyderabad and Bangalore Offices of the Reserve Bank of India.

2.5.3 Electronic Funds Transfer (EFT) - Pilot Project

The setting up of large scale electronics funds transfer service is a critical requirement of modern payments system. A pilot project is in operation between Mumbai and Chennai and will cover all public sector banks and other banks eventually. The application software developed in C and running on SCO UNIX 5.x.x. has been made *Y2K Compliant* and is currently operational. It uses the existing X.25 network (BANKNET) and RBI Net Communication Software.

2.5.4 Floppy based Input Clearing

The Floppy based input clearing system is employed for clearing settlement relating to High Value clearing i.e. where the value of individual clearing instrument is at least Rs.100,000 Inter bank clearing and Return clearings in respect of High Value clearing and of MICR clearing. At non-MICR centres where the Reserve Bank is managing the clearing houses, the main clearing is also carried out under Floppy based Input clearing system. The Floppy based Input clearing Application Software is made *Y2K Compliant*. Similarly, the Application Software for Inter-city clearing is also being made *Y2K Compliant*.

2.5.5 Securities Settlement System

The Delivery versus Payment system for processing the transactions in Government dated securities held in Subsidiary General Ledger (SGL) Account in Public Debt Office was made operational from July 17, 1995. The SGL with DVP (Government Securities and Treasury Bills), SGL, Book Debt and GP Notes Application Software have been made *Y2K Compliant* and supplied to all the offices of the Bank. Further the 10% Relief Bonds Scheme (now 9%) Application software has been made *Y2K Compliant* and is operational at Byculla, New Delhi, Calcutta, Bangalore, Chennai and Ahmedabad Offices of the Bank.

2.5.6 Applications in the Banking Departments of the Bank

The Deposit Accounts Departments of the Reserve Bank of India have been supplied the DAD BASIS Version 3.0 Application Software, which has been made *Y2K Compliant* and independently tested and audited by third party for *Y2K Compliance*.

A comprehensive *Y2K Compliant* Application Software has been developed for the Public Accounts Departments of the Reserve Bank of India and is being distributed to all the offices for installation and operationalisation.

2.5.7 Currency Chest Accounting and related Application Software at Issue Offices

The work of development and data conversion of the revised Currency Chest Accounting Application and other Application software at Issue offices was taken up in March 1998. Currently the Application Software developed is under testing and once completed, it will be distributed to all the offices of the Reserve Bank of India. The Claims Application Software running at Mumbai Office is *Y2K Compliant*.

2.5.8 SWIFT Products and Services

The mandatory tests in November and December 1998 results have shown that the SWIFT System is *Y2K ready*. The test results have been documented and kept in the Department of External Investments and Operations of the Reserve Bank.

3. Status in Banking and Financial Sector

3.1 The Y2K Project Cell of the Department of Banking Supervision of the Reserve Bank of India continued to monitor the progress of Y2K compliance efforts through monthly reports and proactive response to the significant concerns disclosed by the banks. Supervisory communications to banks and financial institutions also stressed the need to assess the impact of embedded systems, credit/liquidity risk on account of customers/correspondents of the banks being non compliant and taking remedial action. The focus of the monitoring efforts however shifted from upgradation and implementation to the testing and development of institutional and system wide Contingency Plans. Besides, banks and financial institutions have been advised to come out with a suitable disclosure by way of

Press Release, brochure or otherwise in June, September and December 1999 on their Y2K status to create public awareness.

3.2 On-site verification of compliance was taken up which included regular Annual Financial Inspections as also specially targeted appraisal of Y2K compliance. Individual meetings were held with officers-in-charge of the Y2K project in commercial banks where progress was assessed to be deficient and serious concerns of the Reserve Bank in this regard were conveyed to them. It was observed that while banks and institutions are addressing the Y2K problem, particularly in relation to their internal systems and applications, certain external dependencies continue to cause concerns. Commercial banks, however, have been exhorted to step up their compliance efforts.

3.3 The fiscal incentives announced in the Union budget for the Year 1999-2000 providing for deduction of expenditure incurred exclusively for making the existing systems Y2K compliant is a positive measure. This measure will provide an incentive for corporate and other businesses for achieving Y2K compliance, thus indirectly reducing the risk exposure of banks in their loan portfolios and third party exposures.

3.4 Commercial Banks

The progress of the Y2K compliance by commercial banks is provided in Table 1.

Table -1
Commercial Banks

Description	**Percentage of compliance by targeted banks**	
Banks reported to be compliant	70.20	
Banks reported compliant but with minor issues	8.70	
Banks expected to be compliant by end June 1999	21.10	
Total	100.00	

The table, however, needs to be interpreted with caution. Full compliance might not have been obtained in some banks and time extensions therefore have been inevitable in such cases because of exogenous factors. In particular, delays in promised delivery schedules by vendors and because of the need to customise and port Y2K compliant versions of packages across a number of geographically dispersed branches, time over runs have taken place. The compliance efforts have nevertheless been very strong with banks taking steps to ensure that there are enough budget provisions for the purpose. The feedback regarding the position of the SWIFT interfaces and participation by the banks in the mandatory test recommended by the Society for Worldwide Interbank Financial Telecommunication (SWIFT) has revealed that 39 out of 60 banks, which are members of the SWIFT have successfully completed testing, while testing by the other banks is in progress.

3.5 Non Banking Subsidiaries of Commercial Banks

Non banking subsidiaries of commercial banks have reported successful completion of their Y2K projects so far as their internal systems are concerned.

Table - 2
Non-Banking Subsidiaries of Commercial Banks

Description	Percentage of compliance by targeted institutions
Institutions compliant	100.00

The institutions are now being urged to expedite preparation of contingency plans.

3.6 Financial Institutions

A summary of assessment of compliance is given in Table-3 below:

Table - 3
Financial Institutions

Description	Percentage of compliance by targeted institutions
Institutions compliant	38.40
Institutions expected to be compliant but with minor issues	23.10
Institutions expected to be compliant before June end	23.10
Institutions whose compliance is being pursued	15.40
Total	100.00

In respect of financial institutions, full compliance has been constrained because of the exogenous factors but they are being addressed in an expeditious manner.

3.7 Primary Urban Co-operative Banks

Reserve Bank of India is persisting with the rigorous follow up measures both directly with the urban co-operative banks concerned as well as through its Regional Offices of the Urban Banks Department. Apart from individual meetings with CEOs of some banks meetings were also held in Mumbai, Ahmedabad, Chennai and Hyderabad, where there is a concentration of co-operative banks. The compliance status is as follows:

Table - 4
Primary Urban Co-operative Banks

Description	Percentage of compliance by targeted banks
Primary Urban Co-operative banks not computerised	41.50
Primary Urban Co-operative banks compliant	20.60
Primary Urban Co-operative banks whose compliance is being pursued	37.90
Total	100.00

3.8 Primary and Satellite Dealers in Government Securities

The position of primary and satellite dealers are given in Table –5 and Table – 6 respectively.

Table – 5
Primary Dealers in Government Securities

Description	Percentage of compliance by targeted institutions
Primary Dealers in Government Securities compliant	75.00
Primary Dealers in Government Securities expected to be compliant before June end 1999	16.70
Primary Dealers in Government Securities whose compliance is being pursued	8.30
Total	100.00

Table - 6
Satellite Dealers in Government Securities

Description	Percentage of compliance by targeted institutions
Satellite Dealers in Government Securities compliant	75.00
Primary Dealers in Government Securities whose compliance is being pursued	25.00
Total	100.00

3.9 State Co-operative Apex Rural Development Bank (SCARDB), State Co-operative Banks, Central Co-operative Banks and Regional Rural Banks

The Y2K compliance status of the above institutions is monitored by the National Bank for Agriculture and Rural Development (NABARD). The status in respect of the above institutions is given in Table –7 through Table – 10.

Table - 7
SCARDB

Description	Percentage of compliance by targeted banks
SCARDB not computerised	47.37
SCARDB compliant	42.11
SCARDB whose compliance is being pursued	10.52
Total	100.00

Table - 8
State Co-operative Banks

Description	Percentage of compliance by targeted banks
State Co-operative banks not computerised	27.59
State Co-operative banks compliant	48.28
State Co-operative banks whose compliance is being pursued	24.13
Total	100.00

Table - 9
Central Co-operative Banks

Description	Percentage of compliance by targeted banks
Central Co-operative banks not computerised	58.42
Central Co-operative banks compliant	30.98
Central Co-operative banks whose compliance is being pursued	10.60
Total	100.00

Table - 10
Regional Rural Banks

Description	Percentage of compliance by targeted banks
Regional Rural banks not computerised	57.66
Regional Rural banks compliant	31.12
Regional Rural banks whose compliance is being pursued	11.22
Total	100.00

3.10 State Finance Corporations and State Industrial Development Corporations

The Y2K compliance status of the above institutions is monitored by the Industrial Development Bank of India (IDBI). The Reserve Bank of India is following up with the IDBI to intensify their proactive measures. IDBI has also taken up the issue of Y2K compliance of SFCs and SIDCs with the Chief Secretaries of the State Governments concerned. The position in respect of these institutions is given in Table – 11 and Table – 12.

Table - 11
State Finance Corporations

Description	Percentage of compliance by targeted institutions
State Finance Corporations not computerised	11.11
State Finance Corporations compliant	22.22
State Finance Corporations whose compliance is being pursued	66.67
Total	100.00

Table - 12
State Industrial Development Corporations

Description	Percentage of compliance by targeted institutions
State Industrial Development Corporations not computerised	17.86
State Industrial Development Corporations compliant	35.71
State Industrial Development Corporations whose compliance is being pursued	46.43
Total	100.00

3.11 Housing Finance Companies (HFCs)

National Housing Bank (NHB) has been proactively guiding and monitoring the compliance efforts of the housing finance and other companies registered and availing refinance from them. NHB is also following with HFCs having smaller asset base. It is reported that majority of these do not have date sensitive computerised operations.

3.12 Institutions supervised by Securities and Exchange Board of India (SEBI) and Insurance Regulatory Authority (IRA)

The Reserve Bank of India is sharing the information with the SEBI and IRA regarding supervisory initiatives on Y2K compliance, while requesting a feedback of the measures being taken by them to address the problem within their jurisdiction. A task force has been set up by SEBI to co-ordinate the efforts and monitor the progress by the institutions under their supervision which have been advised to be Y2K compliant by June 1999. According to the assessment of the Insurance Regulatory Authority, no major Y2K related problems are envisaged.