BANQUE DE FRANCE

LE DIRECTEUR GÉNÉRAL
DE LA FABRICATION DES BILLETS

Puteaux, 21 July 1995

Mr Alan GREENSPAN
Governor

BOARD OF GOVERNORS
OF THE FEDERAL RESERVE SYSTEM

WASHINGTON, D.C. 20551
U.S.A.

Dear Mr Governor,

I am writing to you in my capacity as Chairman of the Steering Committee of the Special Study Group 2 (SSG-2) in order to brief you on the progress of the Study Group's work over the last two and a half years. The Study Group was formed in January 1993 by the G-10 central banks in conjunction with the members of European Bank Note Printers Conference and Australia, with a mandate to explore ways of reducing the risk of counterfeiting of banknotes using colour copiers and scanners linked to personal computers.

As is explained in greater detail in the attached Executive Summary, the Study Group's work has progressed quite rapidly. Two different technologies are currently available. Should the copier manufacturers agree to install them, these two technologies will enable colour copiers to recognise banknotes and thus to disengage the copying mechanism. It can be expected that it will be possible to equip new copiers with these systems starting in about one year's time but progress has so far been hampered by the resistance of the representation of the Japanese colour copier manufacturers (JBMA) to include the second technology. The Steering Committee is currently trying to convince the JBMA that two different technologies are necessary.

In addition to these two systems, a third system has been developed which enables law enforcement agencies to trace the specific copier used to counterfeit banknotes. This system is already operational.

In connection with copiers, the SSG-2 is expanding its work programme to include scanners linked to personal computers, which constitute a potentially greater counterfeiting threat than copiers. I hope to be able to inform you of the Study Group's progress in this regard in about a year's time.

I am, dear Mr Governor,

Yours sincerely,

A. ARMAND
Chairman of the Steering Committee of the SSG-2

Executive Summary of SSG-2 Activities
January 1993 - June 1995

The *Special Study Group 2* (SSG-2) was established in January 1993 by the G-10 central banks in conjunction with the members of the European Bank Note Printers Conference, who had previously set up a Working Group of technical experts (SSG-1) in order to study the general problem of counterfeiting by means of colour copiers. A *Steering Committee* was also formed to supervise of the SSG-2's work programme and budget. At the suggestion of the Bank of Japan, the Japanese copier manufacturers were encouraged to work with the SSG-2 to develop systems by which colour copiers could recognise banknotes and thereby refuse to make copies.

I. Overview of work to date

The SSG-2 has assessed a large number of alternative technologies for the prevention of counterfeiting using colour copiers, and believes that a combination of two technologies, described below, would provide an effective safeguard against "casual" counterfeiting.

(a) Common marks

The first system involves a *common mark*, which is printed on the banknote and is recognised by the colour copier. The mark can either be hidden in the background of the banknote design, or can take the form of an easily recognisable "seal" on the note. Drawbacks of this system are that it will require a redesign of the note and that it may be possible to circumvent if the function of the mark becomes publicly known. The SSG-2 expects that it will be possible to install this system in new copiers as from August 1996. The system has been developed voluntarily by the Omron Corporation of Japan for the Japan Business Machine Makers Association (JBMA), whose members currently account for the whole of the worldwide production of colour copiers.

(b) Microwave system

The second system involves printing banknotes on paper incorporating non-magnetic fibres, which can be detected by the copier using *microwave technology*. This system is potentially superior to the common mark system in that it can be introduced into banknotes simply by adding special fibres to the paper and may therefore be technically more difficult to defeat. However, the JBMA is not enthusiastic about also adopting this system because it has no experience in using microwave technology in copiers, and is concerned that compatibility problems may arise.

There is some uncertainty as to when the microwave system will be operational: the SSG-2 believes that the system could be incorporated in copiers as early as next summer, while the JBMA is concerned that it could take as much as 2-3 years to evaluate the system fully. Since some further development work is necessary (e.g. to ensure that paper containing the fibres is fully compatible with all aspects of banknote production and use), the likelihood of a delay is greater with the microwave system than with the common mark system.

The technologies used in the microwave system have been developed by NV Bekaert SA, which holds patents on the manufacture of the fibres and their use for recognition purposes, and Arjo-Wiggins SA, which holds patents on methods of

incorporating the fibres in paper. Licensing and royalty agreements have yet to be reached with these firms.

While there is some uncertainty about the availability of the microwave system, the SSG-2 believes that it is essential that both systems be used jointly. Since the two technologies differ substantially, it would be difficult for counterfeiters to defeat the systems through trial-and-error experimentation. Furthermore, since some central banks may choose to use only one system, the inclusion of two detectors in the copiers would provide central banks with useful flexibility. Finally, the use of both technologies would make it more likely that a solution to the counterfeiting threat posed by scanners linked to personal computers, which constitute a potentially greater threat than colour copiers, could be found without the need to introduce yet another technology. However, the use of both systems in combination, as recommended by the SSG-2, would add to the cost of colour copiers with obvious implications for competitiveness.

(c) Tracing system

It should be noted that in addition to these two systems, the JBMA has voluntarily developed a *tracing system* which enables law enforcement agencies to determine the specific machine used to counterfeit banknotes. This system is already operational, and considerably increases the likelihood that counterfeiters of banknotes will be apprehended.

II. Future work

(a) SSG-2

In the year ahead the SSG-2 will monitor the final development and implementation of the two anti-counterfeiting systems, and ensure that any technical difficulties are resolved. Given the progress made with regard to copiers, the SSG-2 has been instructed by the Steering Committee to examine, through bilateral contacts with a small number of manufacturers, whether the technologies developed for copiers could also be used for scanner and computer systems. Since medium-sized and small scanners appear to constitute the greatest threat, the SSG-2 will focus its efforts on this segment of the industry.

(b) Steering Committee

In order to emphasise the importance attached by the central banks to having both anti-counterfeiting systems incorporated in copiers, the Steering Committee has decided to send a small group of Heads of Delegation to Japan to resolve with the JBMA any difficulties to which this could give rise.

The Steering Committee believes that at some future date legislation may be required to limit the risk of counterfeiting of banknotes using copiers and scanners, in particular by preventing the importation of colour copiers and scanners not equipped with adequate anti-counterfeiting systems. The Committee has therefore decided to set up a small group of experts to explore legal issues that would arise in this context.