

BANK FOR INTERNATIONAL SETTLEMENTS, BASLE/SWITZERLAND

TELEFAX TRANSMITTAL COVER SHEET

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For the attention of: [REDACTED]

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BANQUE NATIONALE DE BELGIQUE
For the attention of: [REDACTED] Chef du Département de l'Imprimerie

Fax No: [REDACTED]
BANK OF CANADA
For the attention of: [REDACTED] Department of Banking
Operations

Fax No: [REDACTED]
CZECH NATIONAL BANK, STATE PRINTING WORKS ON SECURITIES
For the attention of: [REDACTED] Technical Manager

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DANMARKS NATIONALBANK
For the attention of: [REDACTED] Director, Banknote Printing Works

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BANQUE DE FRANCE
For the attention of: [REDACTED] Directeur Général de la Fabrication
des Billets

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DEUTSCHE BUNDESBANK
For the attention of: [REDACTED] Vertreter der Hauptabteilung
Hauptkasse

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BANK OF GREECE, BANKNOTE PRINTING WORKS
For the attention of: [REDACTED]

Fax No: [REDACTED]
HUNGARIAN BANKNOTE PRINTING CORPORATION
For the attention of: [REDACTED] General Manager

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BANK FOR INTERNATIONAL SETTLEMENTS, BASLE/SWITZERLAND

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To:

Fax No: [REDACTED]

CENTRAL BANK OF IRELAND

For the attention of: [REDACTED] Assistant Director General

Fax No: [REDACTED]

BANCA d'ITALIA

For the attention of: [REDACTED] Condirettore Centrale
Capo del Servizio Fabbricazione Carte Valori

Fax No: [REDACTED]

THE BANK OF JAPAN

For the attention of: [REDACTED] Director, Issue Department

Fax No: [REDACTED]

DE NEDERLANDSCHE BANK

For the attention of: [REDACTED] Deputy Director Sector
Payments

Fax No: [REDACTED]

NORGES BANK SEDELTRYKKERI, Oslo

For the attention of: [REDACTED] Director

Fax No: [REDACTED]

BANCO DE PORTUGAL

For the attention of: [REDACTED] Deputy Manager - Currency Issue
Dpt.

Fax No: [REDACTED]

FABRICA NACIONAL DE MONEDA Y TIMBRE, Madrid

For the attention of: [REDACTED] Engineering Manager

Fax No: [REDACTED]

SCHWEIZERISCHE NATIONALBANK

For the attention of: [REDACTED] Direktor, Bereich Bargeld

Fax No: [REDACTED]

CENTRAL BANK OF THE REPUBLIC OF TURKEY

For the attention of: [REDACTED] Vice Governor

Fax No: [REDACTED]

BANK OF ENGLAND

For the attention of: [REDACTED] General Manager
Bank of England Printing Works

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BANK FOR INTERNATIONAL SETTLEMENTS, BASLE/SWITZERLAND

TELEFAX TRANSMITTAL COVER SHEET

To:

Fax No: [REDACTED]

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

For the attention of: [REDACTED]

Assistant to the Board for Federal Reserve System
Affairs, Office of Board Members

Fax No: [REDACTED]

AB TUMBA BRUK

For the attention of: [REDACTED]

Director

Fax No: [REDACTED]

BANK OF ENGLAND PRINTING WORKS

For the attention of: [REDACTED]

Chief Scientist

Fax No: [REDACTED]

**BUREAU OF ENGRAVING AND PRINTING, DEPARTMENT OF THE
TREASURY**

For the attention of: [REDACTED]

From:

Secretary SSG-2

**Coordinating Services for Central Banks
and International Organisations**

Ref./Comments:

On behalf of the Chairman, please find attached the draft minutes of the meeting of SSG-2 held on 12th June 1998. I should be grateful for comments by 6th July.

Kind regards,

If this transmission is not complete, please call (41) 61/280 85 86

B.I.S., Basle, Switzerland

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16th June 1998

Minutes of SSG-2 Plenary Group Meeting
held in Stockholm, 12th June 1998

M. Armand opened the meeting by thanking Tumba Bruk for hosting it; he went on to welcome Portugal, which had just joined the SSG-2 and then noted that there was no representation from Finland. Finally, he mentioned that he was stepping down from the Chairmanship, partly for the sake of rotation, but also because most of the work was now in the US. In this context, he was delighted that Mr. Allison had been offered the post and had accepted; the changes had been endorsed by the G10 Governors in a recent meeting.

1. Report and discussion on computer systems

1.1 Presentation

Dr. Furley described briefly the history of the digital watermarking project with Digimarc, noting that agreement had been reached on the programme for the alpha phase, which was scheduled to finish in November 1998.

This was followed by a presentation by Digimarc of the document recognition marks, which had been used in other areas and were now being extended to the bank note printing process. Action could be taken to combat copying of bank notes at different stages in the process: the scanning, the opening of the file and the printing. Digimarc would need guidance as to what actions would be appropriate, both from the legal point of view and from the point of view of the process. In other cases (such as vidcos), the aim had been to communicate ownership, so something else would be needed for bank notes. It seemed that it might also be possible to include detection of the common marks, some work having already been done with the seal type mark. It was noted that the digital recognition marks provided other opportunities, such as interfering with a search on the Internet.

A number of questions were raised about the technique and its application to the bank note printing process. These included possible problems with intaglio printing, as opposed to offset (where there might be difficulties in incorporating the marks into an existing design), the effect on the speed of the scanning and copying process (which should be negligible), the penetration of the market (which, in Digimarc's view, depended initially on its deployment by the note printing industry) and the probability of false/positive identification (which was seen as very unlikely, given that digital information was put into the mark). While it was hoped that there could be a wide degree of common decisions, especially on the detector, some country specific options should be possible, such as on the actions to be taken to prevent copying.

1.2 Discussion within SSG-2

It was suggested that if any country needed further information they should contact Messrs Furley or Stone. For the time being, no further action was needed, as the alpha phase has already been agreed and paid for. Following the report on the first phase, which was due in November, a decision on future work would be needed early in 1999. Meetings of the Steering Committee and the Plenary Group in Basle had been planned for January and February respectively. Delegates were also reminded that all the information should be treated as commercially confidential within their own organisation.

In the tour de table which followed, all participants expressed positive reactions to the first phase, with virtually no reservations. The technique appeared promising for the future, especially with the growing threat of counterfeiting using scanners and personal computers, but clearly more information was needed before any commitments could be made for the second phase. Areas of uncertainty included the robustness of the software against hacking, the speed of market penetration for the software and the final costs, where more information was needed as to the size of the market, so that an open-ended commitment for payment of royalties was avoided. It was unfortunate that the timing of the work meant that the system might not be ready in time for the early production of the euro note, but it was suggested that it should be introduced into the print run as soon as it became available, possibly for the middle denomination notes; suggestions on this would be included in the final report from the SSG-2 Working Group.

1.3 Other organisations

Messrs Stone and Furley mentioned that, although they had initially been comfortable that Digimarc was the only organisation capable of developing the digital recognition system, there were now other companies in this field and they would be grateful for guidance in how to deal with these other companies, in order to avoid subsequent problems. In discussion, it was agreed that it was important to be even-handed; in particular, it had been agreed for the specification of the euro note that there should be no feature with a single source supplier. In theory, the same principle should be followed as for the common mark system, where the marks themselves were the property of SSG-2 and any company coming up with an image recognition product could develop its own. However, in the case of the digital recognition marks, Digimarc had used some of its "own" intellectual property to adapt an existing system for bank notes, so that it would be harder to identify what might be defined as the property of SSG-2. It was agreed that this question of the ownership of the intellectual property should be included in the final signed agreement with Digimarc and a letter would shortly be drafted by Messrs Furley and Stone to open the issue with them; there would also need to be consultations with the lawyers.

75 **2. SSG-2 membership, budget and funding**

76 **2.1 SSG-2 membership**

77 The Chairman welcomed Portugal to the meeting, noting that both Portugal and Luxembourg
78 had been invited to join the SSG-2, at the suggestion of the management of the ESCB. The reason for
79 this was that they would both be issuing euro notes, which will use the common marks, so it was felt
80 that they should have a right to participate in the decision and a duty to support the research
81 financially. A reply was still awaited from Luxembourg, but changes in the management structure
82 were occurring there, which might have delayed an answer.

84 **2.2 Funding allocation**

85 Mr. Allison mentioned that the present key to share the funding (using four hands based on
86 figures for notes issued) was satisfactory if only small amounts of funding were required. However,
87 once the amounts became larger, the structure should be re-considered, so that contributions were
88 more closely related to the scale of note issue or counterfeiting. Another question was the move to the
89 ECB once euro notes were issued; the 11 individual central banks could be considered in terms of, say,
90 their individual GDPs, whereas the previous system would have left the ECB as a single central bank.

91 Dr. Furley had circulated tables with a number of variants for the contributions key. After
92 discussion, it was agreed unanimously that funding should be based on GDP figures, rounded to two
93 significant figures, and that similarly there should be weighted voting, using alternative A in the tables
94 attached to these minutes. The new scheme would become effective from 1st January 1999, which
95 meant for the next subscription. It was also emphasised that the principle of "jointness" continued to
96 be important, that all member countries contributed to a project even if they might not benefit directly.
97 The new system was an attempt to find a balance between the traditional system and something which
98 better reflected the level of spending and ability to pay.

100 **2.3 Budget and work programme**

101 Dr. Furley presented the budget for the period up to mid-2000, together with the work
102 programme for the first phase of the Digimarc project and some allowance for additional meetings in
103 the following year. This totalled £350,000 and would require a subscription to be paid in early 1999;
104 such a subscription would raise about £266,000 at current rates. No allowance had been made for
105 further payments to Digimarc for subsequent phases of the project and, so that the central banks could
106 include an allocation in their budgets for 1999, it was agreed that the payment of \$1.5 million (around
107 £900,000) should be included as a tentative payment to Digimarc in the first half of 1999 for research
108 in the later stages. Any payment would need final approval from the SSG-2 Plenary Group meeting in
109 February.

110 3. Other matters

111 3.1 Bekaert/Arjo Wiggins system

112 Dr. Furley reported on the latest state of play with the development of the second system to
113 combat counterfeiting using colour copiers, which was being developed by Bekaert and Arjo Wiggins,
114 now using radio waves. Although this appeared more promising than the steel fibres, it was still
115 necessary for Bekaert and Arjo Wiggins to convince the JBMA of the viability of the system; a
116 meeting would be held in July to this end. The Newsletter would include a report on developments. It
117 was agreed in a tour de table that the system was still worth pursuing.

118
119 3.2 Tracing system

120 An updated version of the system was now available and, although the JBMA had hitherto met
121 all the costs, SSG-2 was now being asked to pay ¥500,000 for this initial upgrade, with further
122 upgrades every two years. Delegates were also reminded to let the SSG-2 Working Group know
123 quickly if they encountered problems with getting information from any individual copier
124 manufacturers.

125
126 3.3 Press room unit

127 Omron had developed a checking system which could be used in the Press Room, which they
128 were prepared to make available at ¥5 million each, provided 20 units were sold. A questionnaire
129 would be sent out to establish the demand.

130
131 3.4 Checking system

132 A new version of the checking system was now available, with a revised manual.
133

134 4. Future meetings

135 The Steering Committee would meet in Basle on 26th January 1999, with a meeting of the
136 Plenary Group following on 16th February, also in Basle, to review and take decisions on the second
137 phase of the Digimarc project. A meeting of the Steering Committee had been tentatively scheduled
138 for 29th October 1998 in Basle, but the date would be confirmed if it were felt that the meeting was
139 necessary.

140
141 5. Any other business

142 Mr. Holm reported that, following his retirement, Mr. Färber would represent his constituency
143 on the Steering Committee as from 1st February 1999.

144 The ECB had been invited to participate in the BPC as an observer, so it was agreed that they
145 should also participate in the SSG-2 (including the Steering Committee), on the same basis, in the
146 future.

**List of participants in the
SSG-2 Plenary Group Meeting in Stockholm
on Friday, 12th June 1998**

Austria

Belgium

Canada

Czech Republic

Denmark

France

Germany

Greece

Hungary

Ireland

Italy

Japan

Netherlands

Norway

Portugal

Spain

Sweden

Switzerland

Turkey

United Kingdom

United States

SSG-2

BIS