



HM TREASURY

Euro compatibility: a guide for managers

Second edition

January 2004

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Foreword by Ruth Kelly, MP



I am delighted to present the second edition of *Euro compatibility: a guide for managers*. This guidance updates and revises the contents of the first edition, and takes into account ongoing work on euro preparations since 2001.

Preparations remain important, and excellent progress has been made in the public sector, particularly across central government departments. Many local authorities are also making good progress with preparations, and factoring the euro into their business planning and risk management procedures.

Euro compatibility is an issue for everyone, since making systems euro compatible when replacing or upgrading them could result in substantial savings in the event of a changeover. Government policy remains that euro compatibility should be incorporated into all new or upgraded systems in the public sector where this represents value for money. As this can normally be done at marginal cost, it would usually represent value for money unless the system had a very short life. For example, the Inland Revenue has now built euro compatibility into eight of its systems procured or upgraded since 2001.

This guidance should be helpful in determining what changes need to be made to systems to make them euro compatible, and the private and voluntary sectors may also find this approach useful.

A handwritten signature in black ink that reads "Ruth Kelly". The signature is fluid and cursive.

RUTH KELLY, MP
Financial Secretary to the Treasury



Introduction

The Government's policy on membership of the single currency remains as set out most recently by the Chancellor of the Exchequer in the House of Commons on 9 June 2003. In principle the Government is in favour of UK membership of EMU; in practice, the economic conditions must be right. The determining factor underpinning any Government decision on membership of the single currency is the national economic interest and whether the economic case for joining is clear and unambiguous.

As the Chancellor has said, the five economic tests will define whether a clear and unambiguous case can be made. In June 2003, the Treasury completed an assessment of the five economic tests. Overall, the assessment concluded that, "since 1997 the UK has made real progress towards meeting the five economic tests. However, on balance, though the potential benefits of increased investment, trade, a boost to financial services, growth and jobs are clear, we cannot at this point in time conclude that there is sustainable and durable convergence or sufficient flexibility to cope with any potential difficulties within the euro area."

In his statement to the House of Commons on 9 June 2003, the Chancellor announced a programme of far-reaching reforms, which are right for Britain's economic interests and right to help us meet the five tests. The Government will report on progress on the reform agenda in Budget 2004. The Government can then consider the extent of progress and determine whether on the basis of it we make a further Treasury assessment of the five tests which – if positive – would allow us to put the issue before the British people in a referendum.

The Government is committed to ensuring that the UK retains a genuine option to join a successful single currency. Since 1997, the Government has worked with the business community, wider public sector and voluntary groups to take forward detailed planning for possible UK entry, if that is what Government, Parliament and the people decide. The *third outline National Changeover Plan*, published on 9 June 2003, sets out a comprehensive and detailed planning framework. Failure to prepare now would result in increased costs of changeover for the whole economy if the UK did join.

As a key part of these preparations, central government departments have been tasked with building in euro compatibility as part of the ongoing modernisation of public sector systems. As the Prime Minister said when he launched the first outline National Changeover Plan in February 1999, "where computer systems are being upgraded, all departments will build in euro compatibility where that represents value for money." This remains the position.



The main purpose of this document is to aid those in the public sector who manage, develop or procure IT systems or replace existing systems or services. This guide should assist people involved in planning and preparations to consider the most appropriate method of delivering the correct degree of euro compatibility to meet identified business needs. It should also assist those making plans to convert legacy systems for euro functionality after a UK referendum. Plans need to ensure:

- that the service to the customer would remain at the same level throughout the different phases of a changeover;
- that all rules for conversion, rounding etc. would be followed;
- that dual display requirements from the draft public sector consumer code of conduct (see Annex F) would be followed; and
- that the managed transition plan would be deliverable (see Annex B of the *third outline National Changeover Plan*).

Although this guide focuses on IT systems, any changeover to the euro would affect the whole business, and so euro compatibility should be a consideration in all policy, process and procurement decisions. It is advisable for public sector organisations and managers to verify whether any item being procured, or new policy, process or system being introduced, could function during and after any changeover to the euro. In its broadest sense, “euro compatibility” is the ability of new developments to operate in euro, with the minimum of additional change during and after any changeover. Examples of non-IT changes that could be included under this broad description would be the updating/procurement of:

- parking meters;
- vending machines;
- fruit or cash prize machines;
- ticket machines;
- coin-operated lockers;
- cash registers;
- forms;
- guidance;
- public notices;
- posters;
- school books;
- tourist guides; and
- coin-operated phones.

There are many other examples, and it should be routine when making any change to a business to consider the potential impact of the euro. Choosing a compatible solution will often have nil or marginal cost now, and could save the need to change the system or process or, in the worst case, repeat the procurement, in the event of a changeover.

Many cash handling machines which can be switched quite easily to operate in either sterling or euro are widely available now. Consideration should also be given to reducing reliance on cash by introducing machinery that uses other methods of payment. For example, coin-operated lockers could be updated with lockers that use tokens instead.

Not all of the above would have to be made euro compatible at the same time. It is a business decision when a new system or piece of equipment would need to operate in euro. This also means that your euro compatibility requirements will be relative to what you need your machinery, systems and processes to be able to do in euro at what stage. Machines using euro cash would not normally accept euro until any E day. Much euro compatibility, particularly in the case of currency neutrality on forms or cash registers, could be introduced now where changes are being made.

Useful documents to refer to when reading this guidance are:

- the *third outline National Changeover Plan*;
- the regular reports on euro preparations; and
- the local authority guidance on euro preparations.

Electronic copies of these publications are available at www.euro.gov.uk, or you can request a published copy by telephone from **020 7270 4558**.

About this document

This document is intended as a guide for public sector managers and does not provide the level of detail required for full policy, process or system development. It represents a framework for planning and is not a substitute for detailed design requirements, specification and development.

This document addresses the development of policies, processes and systems that would operate before any UK decision to join the euro, during a transition period and following a UK E day. It will be necessary to assess which elements of this document are appropriate, depending on the services that would be offered at the various stages of any UK changeover.

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2 Considering euro compatibility



Why consider euro compatibility?

Introducing the first outline National Changeover Plan in February 1999, the Prime Minister stated that, “where computer systems are being upgraded, all departments will build in euro compatibility where that represents value for money.” This policy has been reiterated several times, most recently at the Chancellor’s Standing Committee meeting on 23 October 2003.

In many cases, euro compatibility can be incorporated as part of new or upgraded systems at marginal cost. The cost of altering systems to accommodate the euro in the event of a UK decision to join the single currency, however, could be more significant. In the vast majority of cases, therefore, building in euro compatibility as part of system development will represent good value for money.

Who should consider euro compatibility?

All managers, system owners, senior responsible owners, project boards and project managers who are involved in developing or upgrading a policy, process, service or system, have a responsibility to consider euro compatibility.

Government Accounting guidance and building in euro compatibility

For central government organisations, any expenditure on building in euro compatibility must fall within the *Government Accounting* guidance covering expenditure on “new services”. Guidance on interpreting the new services rules in relation to euro preparations was set out in a letter dated 10 August 1998 to departmental Account Officers (reference DAO (GEN) 3/98). *Government Accounting* can be found at www.government-accounting.gov.uk

For any other organisations, the Accounting Standards Board’s Urgent Issues Task Force has published guidance on how to account for expenditure on euro preparations alongside other related issues. “*Accounting issues arising from the proposed introduction of the euro*” can be downloaded from the ASB website at: www.asb.org.uk

What level of euro compatibility do I require?

Euro compatibility should be driven by business needs. In some cases, an IT solution is not even necessary, and the need can be met manually.

2 Considering euro compatibility

How should I manage euro change?

It should be managed as a project, using risk management techniques. See the OGC guidelines on project management, which can be viewed on:

www.ogc.gov.uk/sdtoolkit/

Are there any contractual issues?

Please remember that your contract will need to respond to **all** of your business requirements, including those necessary to take account of the euro (see Annex E).

3

Defining euro compatibility



What is euro compatibility?

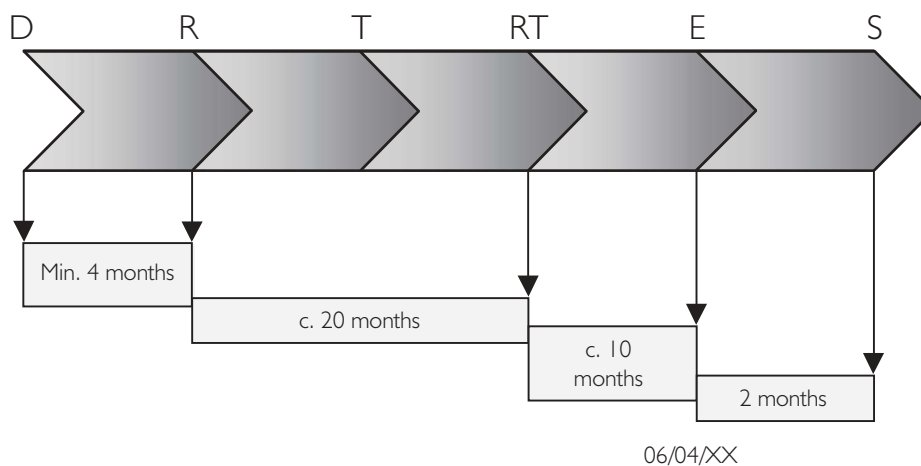
Euro compatibility is a concept most commonly applied to IT systems. However, given that IT systems exist to help meet a business need, euro compatibility must also be considered more widely – for example, in regard to policies and processes.

There is no simple definition of euro compatibility. In general terms, it is a measure of the ability of policies, processes or systems to accommodate the euro. However, what it means to “accommodate the euro” varies significantly depending on the services to be offered by a particular policy, process or system, and the timing of its implementation and decommissioning in relation to a UK changeover.

An illustrative UK changeover timetable

The meaning of euro compatibility depends on the point during a UK changeover when a particular policy, process or system might operate, and on the type of services it would need to support. A system that would go live and be decommissioned in advance of an introduction of euro cash in the UK, for example, might need to provide no or only limited euro functionality in order to “accommodate the euro” and meet business needs.

The *third outline National Changeover Plan* sets out the following illustrative timetable for a UK changeover.



- D: Decision – the Government's decision to recommend joining EMU;
- R: Referendum – UK electorate vote on joining EMU;
- T: time of entry and start of Transition. UK joins EMU. The euro-sterling exchange rate would be irrevocably fixed;
- RT: beginning of Retail Transition. Euro denominated financial services would start to be available from this point;
- E: 06/04/XX. Euro cash introduced and end of transition. UK euro notes and coins would be introduced. All non-cash transactions would be denominated in euro; and
- S: Sterling ceases to be legal tender – end of dual circulation period.

3 Defining euro compatibility

For the purposes of considering euro compatibility, the illustrative timetable can be divided into a number of *euro changeover phases* and *key events*, which may run in parallel:

Phase 1: Pre-referendum (present day to R);

Phase 2: Post-referendum (R to T);

Phase 3: Transition period (T to E);

Key event 1: The completion of system conversion (at any point between T and E, but probably not before RT since payments cannot be made in euro until then);

Key event 2: Start of dual display (at least 4 months before E day);

Key event 3: E day (06/04/XX);

Phase 4: Dual circulation period (E to S);

Key event 4: Withdrawal of sterling (S);

A brief explanation of each of the phases and key events follows.

Phase 1: Pre-referendum

This is the period prior to any future referendum. A referendum would follow a Government decision to recommend membership of the single currency. During the pre-referendum period the euro would remain a foreign currency.

Phase 2: Post-referendum

This is the period between a “yes” vote in a referendum and the UK formally joining the single currency. During this period, while there would be a commitment to joining, exchange rates would not have locked and the euro would still be a foreign currency.

Phase 3: Transition period

This is the period between the UK formally joining the single currency (T day) and the point at which euro cash would be introduced and non-cash transactions could no longer be made in sterling (E day).

At the beginning of a transition period, sterling and the euro would be locked at a fixed conversion rate. Euro and sterling would be entirely interchangeable and there would be no exchange rate variations between the two currencies. To convert sterling to euro, or vice versa, it would be necessary only to use the fixed conversion rate. For example, in Ireland the conversion rate was $\text{EUR } 1 = \text{IEP } 0.787564$.

Electronic transactions would be possible in both euro and sterling during a transition period. Businesses and individuals would not be obliged to use euro, but some might decide to do so for commercial reasons. From the start of a retail transition (RT) a complete range of banking services (other than cash) would be available in euro and

a greater number of businesses might be expected to want to operate in euro. From the end of a transition period onwards, however, electronic transactions would only be possible in euro – it would no longer be legal to transact electronically in sterling.

No euro notes and coins would be issued by the UK during a transition period. Any euro cash from the euro area would not be legal tender in the UK. Public sector organisations would not need to accept euro cash, but some may choose to do so for business reasons. Sterling notes and coins would continue to circulate.

Key event 1: The completion of system conversion

Systems should be converted as and when business needs dictate. Organisations need to look at the changeover timetable and decide what euro services they want to offer during each of the various phases. System conversion should take place before E day, since systems should be ready for service on that day. Converted systems should also be tested thoroughly before they will be needed, in order to minimise the risks of them not performing correctly.

Key event 2: Start of dual display

From at least four months before E day, key amounts should be displayed in both sterling and euro on payslips, bills, retail items, consumer facing literature etc. Further details are set out in the draft public sector consumer code of conduct (see Annex F).

Key event 3: E day

E day marks the introduction of euro cash as legal tender in the UK, and it is also the date from which all non-cash transactions would have to be denominated in euro. Following extensive consultation with organisations across the public, private and voluntary sectors, the Government has concluded that 6 April in the relevant year would be the optimal date for E day. This is because it is a date when systems are typically updated to take account of tax and other changes that are tied to the UK's tax year.

Phase 4: Dual circulation period

This is the period from an introduction of euro cash (E day) to a withdrawal of sterling cash. It would be two months. During this period, both euro and sterling in cash form would have legal tender status in the UK. Shops, businesses and the public sector would accept either euro or sterling cash. Only the euro, however, would be used for electronic or scriptural transactions.

Key event 4: Withdrawal of sterling

At the end of a dual circulation period, sterling cash would cease to be legal tender. From this point onwards, all transactions would be in euro only.

3 Defining euro compatibility

Proposed euro service offerings

The meaning of euro compatibility varies according to the services to be offered by a particular policy, process or system, during the various phases of a changeover. A system operating during a UK transition period, for example, would need to offer different levels of euro functionality in order to “accommodate the euro” and meet business needs, depending on the level of euro services being offered.

For example, organisations could choose to offer various levels of euro services during a changeover. In general, prior to a UK T day, the euro should be treated as a foreign currency. Organisations will need to consider with their stakeholders whether they want to offer euro services at earlier stages of the timetable. For example, in the period after T, the exchange rate would be fixed, and so organisations could accept euro, converting it at the official rate, and charging an explicit handling fee. In the period after RT, it would be possible to make and receive euro payments in non-cash form, so organisations may wish to convert their systems and pay invoices, or even pay their employees, in euro. It should also be borne in mind that dual display of prices must begin at least four months before E day.

By the time of an introduction of euro cash, all organisations should offer all non-cash services in euro only, although sterling cash would continue to be accepted until the end of a dual circulation period.

The choice about whether to provide euro services prior to E day should be a business decision, with the benefits and the costs being carefully weighed.

Levels of euro compatibility

As set out above, what it means to “accommodate the euro” varies significantly according to the services to be offered by a particular policy, process or system and the timing of its implementation and decommissioning in relation to a UK changeover.

However, euro compatibility can be broadly broken down into two basic levels:

- **currency neutrality** – capability to operate in any single currency at any one time. Note that this may not provide the capability to change from one currency to another. Organisations would also need to consider whether currency neutrality offered sufficient capability to meet business needs during a transition period; and
- **full euro compatibility** – capability to provide full euro functionality appropriate to the timing of a policy, process or system and the services that the policy process or system would need to provide.

Full euro compatibility can be further broken down according to different planning scenarios – i.e. planning assumptions concerning when a policy, process or system might operate in relation to a UK changeover and the services it might need to support. The various planning scenarios for new policies, processes and systems are set out in Annex A.

Annexes

Annex A: The definition of full euro compatibility under various planning scenarios

The various planning scenarios that could face managers developing or upgrading a policy, process or system, and the different levels of euro functionality that would be required to achieve full euro compatibility.

Annex B: Business issues for consideration

Some of the key business issues associated with euro compatibility. The solutions outlined in this annex are intended to provide examples of a possible approach. They are not designed to provide definitive answers, since there is a range of options for meeting euro compatibility. It will be necessary to assess how these solutions meet particular circumstances and adapt them as appropriate.

Annex C: Checklists for building in euro compatibility

Guidelines for IT developers planning and implementing a euro compatible IT system.

Annex D: Some typical euro requirements

A list of the requirements systems might need in order to be euro compatible.

Annex E: Wording for procurements

A possible template for use in contracts.

Annex F: The draft public sector consumer code of conduct

Annex G: An interpretation of technical terms

A public sector interpretation of the technical terms used in these guidelines.

A The definition of full euro compatibility under various planning scenarios

What it means for a policy, process or system to be fully euro compatible varies significantly depending on the services to be offered by that policy, process or system, and the timing of its implementation and decommissioning in relation to a UK changeover.

This annex provides details of euro compatibility requirements under a range of planning scenarios – from policies, processes and systems (hereafter referred to simply as systems) which would be developed and decommissioned before a UK T day and would never offer euro services, to systems which would not come on stream until after E day in the UK and would only offer services in euro.

Obviously, a certain degree of judgement is required in deciding which scenario is appropriate for a particular system. For the majority of new public sector systems, however, a scenario 1 or 2 classification will provide the greatest degree of flexibility.

The euro compatibility requirements for the various scenarios set out in this annex are not intended to be prescriptive, but represent a guide for system developers.

Outline of scenarios

Scenario 0 Before full euro services are offered – sterling only

System which would be decommissioned before euro services would be required. No euro functionality would be required.

Scenario 0.1 Before full euro services are offered – sterling with some euro functionality

System which would be decommissioned before euro services would be required. Some euro functionality would be included, determined by business needs.

Scenario 1 Before a UK T day or during a UK transition period – sterling with conversion to euro

System which would become live either before a UK T day or during a UK transition period. It would not offer euro services during a transition period except for customer facing systems, which would offer dual display on summary line output for a period of at least four months before a UK E day and at least during the dual circulation period. However, the system would continue beyond a UK E day and would need to be converted to operate in euro by then.

Scenario 2 Before a UK T day or during a UK transition period – full sterling and euro functionality

As for a Scenario 1 system, but the system would operate in euro as well as sterling during a transition period. Full sterling and euro services would be supported.

A The definition of full euro compatibility under various planning scenarios

Scenario 3 After a UK E day – euro with sterling history

System which would become live after a UK E day and would be designed to operate in euro. However, because it would replace an existing system, it would contain data on, and may have to deal with, pre-E day sterling periods. It would also have to accommodate dual display on summary line output between a UK E day and a withdrawal of sterling in the UK.

Scenario 4 After a UK E day – euro with no sterling history

System which would become live after E day and would be designed to operate exclusively in euro. Since it would be a new system with no predecessor system, it would contain no sterling history and would not have to deal with pre-E day sterling periods.

Scenario 0 Before full euro services are offered – sterling only

System which would be decommissioned before euro services would be required.
No euro functionality would be required.

However, as good system development practice new or replacement systems should be developed “currency neutral” (see Annex C). This would provide some contingency in the event of the system having to operate during a euro period.

Scenario 0.1 Before full euro services are offered– sterling with some euro functionality

As good system development practice, new or replacement systems should be developed “currency neutral” (see Annex C).

In addition, a scenario 0.1 euro compatible system would:

- accept and make payments in euro. Before a UK T day this would entail variable sterling/euro exchange rates which may indicate a largely clerical process or off-line system;
- provide an audit trail of translations to or from euro; and
- entail adequate education/training of staff and customers to support these limited euro operations.

Note: These euro compatibility system requirements could be met by non-IT means. Managers would need to decide how best to meet these requirements, having assessed relevant factors – e.g. expected volumes and value for money.

A The definition of full euro compatibility under various planning scenarios

Scenario I Before a UK T day or during a UK transition period – sterling with conversion to euro

For newly developed systems, good system development practice means that the system should be developed “currency neutral” (see Annex C). However, it may not provide value for money to convert an existing system to make it currency neutral. In addition, a scenario I euro compatible system would:

- receive, capture and retrieve financial data in sterling and, following conversion, in euro;
- distinguish sterling data and euro data on inputs, screens and outputs;
- accept and make payments in sterling and, following conversion, in euro;
- display financial information/calculations in sterling and, following conversion, in euro. (Conversion could take place before E day depending on business needs);
- output and transmit financial information/calculations in sterling and, following conversion, in euro (output includes printed and electronic formats);
- display and output the euro symbol (€) or the indicator EUR from the time the system converts, or offer dual display on summary line output. IT hardware (e.g. keyboards and printers) should preferably support use of the euro symbol;
- in line with the draft public sector consumer code of conduct (see Annex F), from at least 4 months prior to a UK E day and for at least the dual circulation period, provide a summary line translation of key amounts on printed output to external customers;
- convert to or from euro and round in accordance with the EU conversion and rounding rules;
- be designed to minimise the number of translations;
- be designed to minimise errors from the translation process;
- account for discrepancies arising from the translation process;
- provide an audit trail of translations to or from euro;
- provide information and instructions to internal and external customers in sterling and, following conversion, in euro – e.g. notes, forms, leaflets, public guidance, instructions, online information etc.;
- account for transactions in sterling and, following conversion, in euro;
- allow forward planning, projections and targets to be made in sterling and, following conversion, in euro;
- provide management information in sterling and, following conversion, in euro;

- entail adequate education/training of staff and customers to support sterling and euro operations;
- in the case of systems with stored data in sterling, support sterling input and output for as long as business needs demand; and
- preserve the option to “toggle” between sterling screens and euro screens showing the same financial fields, where operators might need such a facility.

Note: Some of these euro compatibility system requirements could be met by non-IT means. Managers would need to decide how best to meet these requirements, having assessed relevant factors – e.g. expected volumes, the need to minimise errors, and value for money.

Scenario 2 Before a UK T day or during a UK transition period – full sterling and euro functionality

As good system development practice the system should be developed “currency neutral”, but it may not be value for money to convert an existing system to make it currency neutral (see Annex C). In addition, a scenario 2 euro compatible system would:

- receive, capture and retrieve financial data in sterling and euro;
- distinguish sterling data and euro data on inputs, screens and outputs;
- accept and make payments in sterling and euro;
- display financial information/calculations in sterling and euro;
- output and transmit financial information/calculations in sterling and euro (output includes printed and electronic formats);
- display and output the euro symbol (€) or the indicator EUR. IT hardware (e.g. keyboards and printers) should preferably support use of the euro symbol;
- in line with the draft public sector consumer code of conduct (see Annex F), from at least 4 months prior to a UK E day and for at least the dual circulation period, provide a summary line translation of key amounts on printed output to external customers;
- convert to or from euro and round in accordance with the EU conversion and rounding rules;
- be designed to minimise the number of translations;
- be designed to minimise errors from the translation process;
- account for discrepancies arising from the translation process;
- provide an audit trail of translations to or from euro;

A The definition of full euro compatibility under various planning scenarios

- provide information and instructions to internal and external customers in sterling and in euro – e.g. notes, forms, leaflets, public guidance, instructions, online information etc.;
- account for transactions in sterling and euro;
- allow forward planning, projections and targets to be made in sterling and euro;
- provide management information in sterling and euro;
- entail adequate education/training of staff and customers to support sterling and euro operations;
- in the case of systems with stored data in sterling, support sterling input and output for as long as business needs demand; and
- preserve the option to “toggle” between sterling screens and euro screens showing the same financial fields, where operators might need such a facility.

Note: Some of these euro compatibility system requirements could be met by non-IT means. Managers would need to decide how best to meet these requirements, having assessed relevant factors – e.g. expected volumes, the need to minimise errors, and value for money.

Scenario 3 After a UK E day – euro with sterling history

A scenario 3 euro compatible system would:

- receive, capture and retrieve financial data in euro and, for sterling periods, in sterling;
- distinguish sterling data and euro data on inputs, screens and outputs;
- accept and make payments in sterling and euro;
- display financial information/calculations in euro and, for sterling periods, in sterling;
- output and transmit financial information/calculations in euro and, for sterling periods, in sterling (output includes printed and electronic formats);
- display and output the euro symbol (€) or the indicator EUR. IT hardware (e.g. keyboards and printers) should preferably support use of the euro symbol;
- convert to or from euro and round in accordance with the EU conversion and rounding rules;
- be designed to minimise the number of translations;
- be designed to minimise errors from the translation process;
- account for discrepancies arising from the translation process;
- provide an audit trail of translations to or from euro;

- provide information and instructions to internal and external customers in euro – e.g. notes, forms, leaflets, public guidance, instructions, online information etc.;
- account for transactions in sterling and euro;
- allow forward planning, projections and targets to be made in euro;
- provide management information in euro;
- entail adequate education/training of staff and customers to support euro and sterling operations in respect of sterling periods;
- for sterling periods provide a summary line translation to euro of key amounts on printed output to external customers;
- in the case of systems with stored data in sterling, support sterling input and output for as long as business needs demand; and
- preserve the option to “toggle” between sterling screens and euro screens showing the same financial fields, where operators might need such a facility.

Note: Some of these *sterling* compatibility system requirements could be met by non-IT means. Managers would need to decide how best to meet these requirements, having assessed relevant factors – e.g. expected volumes, the need to minimise errors, and value for money.

Scenario 4 After a UK E day – euro with no sterling history

A scenario 4 euro compatible system would:

- receive, capture and retrieve financial data in euro;
- accept and make payments in euro;
- output and transmit financial information/calculations in euro (output includes printed and electronic formats);
- display and output the euro symbol (€) or the indicator EUR. IT hardware (e.g. keyboards and printers) should preferably support use of the euro symbol;
- provide information and instructions to internal and external customers in euro – e.g. notes, forms, leaflets, public guidance, instructions, online information etc.;
- account for transactions in euro;
- allow forward planning, projections and targets to be made in euro;
- provide management information in euro; and
- entail adequate education/training of staff and customers to support euro operations.

B Business issues for consideration

An introduction to business issues

Whichever euro compatibility scenario is appropriate for a system, there are a number of key business issues to consider:

- ensuring that third party suppliers, staff, customers and systems can readily recognise the currency in which they are dealing;
- dealing with conversions and roundings correctly and handling discrepancies consistently and clearly;
- maintaining the integrity of data within and across systems; and
- maintaining service levels to customers.

Decisions on these issues will tend to be guided by a combination of two key objectives;

- to ensure that a smooth and cost-effective changeover would be possible in the event of a UK decision to join the single currency; and
- to retain flexibility.

Customers will need to provide information to public sector organisations, but burdens on them should be kept to a minimum.

There is no “right” answer – each organisation should consider their own business needs and consider how these can best be met. In particular, you will want to consider the timing of your systems’ conversions and whether any euro services are being offered during the transition period.

Business issues and examples of solutions

Key business issues include:

- 1 customer preference;
- 2 currency of inputs and outputs;
- 3 conversion of stored data;
- 4 input handling;
- 5 output handling;
- 6 screen display;
- 7 currency recognition; and
- 8 conversion and rounding.

This list is not exhaustive and will vary to some extent for different organisations. For example, “customer preference” will only be relevant for those intending to offer euro services during a transition period.

Each of these issues is addressed in turn below. The solutions outlined are intended to provide examples of a possible approach. They are not designed to provide definitive answers, since there is a range of options for meeting euro compatibility. Individual organisations will need to assess how these solutions meet their particular circumstances and adapt them as appropriate.

I CUSTOMER PREFERENCE – AN ISSUE FOR ORGANISATIONS THAT PROPOSE TO OFFER EURO SERVICES DURING A TRANSITION PERIOD

Issue

Organisations proposing to offer euro services during a transition period need to consider whether they would use a formal system to allow customers to notify a preference to deal with the organisation in euro rather than sterling.

Advantages of such a system include the fact that it would provide certainty and clarity to assist forms issue and output handling. It would also provide some management information about the take-up of euro services.

However, some disadvantages might include additional administration work, the cost of publicising and administering a formal notification process, the potential need for legislation for the notification process and issues around whether a single notification would embrace all systems or whether separate notifications would be necessary for each service.

An example approach

- Rather than conduct a formal notification process, invite selected customers (predominantly incorporated businesses) to notify if they wish to deal in euro. If they do, customer records should be noted and euro output issued instead of sterling output. The agreement would not be binding and could be revoked by either party.
- The organisation should respond when customers indicate that they wish to deal in euro instead of sterling. The type of euro services available should be explained and agreement should be reached with the customer about the start date for euro dealing and to which services the agreement would apply.

2 CURRENCY OF INPUTS AND OUTPUTS

Issue

During a transition period, euro input and output could be offered in addition to sterling output, but sterling services would have to be provided. Organisations which facilitated euro input would need to consider whether to perform financial calculations in euro, or in sterling and convert some or all of the figures to euro on output. The choice would depend on factors such as the prevailing currency of legislation and/or IT systems.

The draft public sector consumer code of conduct (see Annex F), states that dual currency information in sterling and euro should be provided for consumers, in an appropriate form, from at least four months before a UK E day. This might mean that organisations should include a translation of key amounts in the other currency on all financial output to customers from at least four months before a UK E day.

From a UK E day onwards, all input and output relating to any period after a UK E day would be in euro.

The draft public sector consumer code of conduct (see Annex F) states that dual currency information in sterling and euro should be provided for consumers, in an appropriate form, until at least the withdrawal of sterling in the UK. This might mean that organisations should include a translation of key amounts on all financial output to customers until at least the withdrawal of sterling in the UK. Financial output relating to earlier years but not issued until after a UK E day could be either:

- in sterling with a translation to euro of key amounts; or
- in euro with a translation to sterling of key amounts.

An example approach

- During a transition period, for euro customers, perform calculations in sterling (if legislation and IT systems remain in sterling), and convert totals to euro. For sterling customers, show a translation to euro of key amounts from the point in a transition period when euro services are introduced for a business system, at the start of the last sterling period prior to a UK E day or four months prior to a UK E day, whichever is the earliest.

B Business issues for consideration

- Specify the first euro period as being the first period that ends after a UK E day, even if some of that period would have been in sterling. Have regard to the implications that decisions of this type could have on third parties and staff.
- Include a translation to sterling of key amounts on all financial output to customers until at least the withdrawal of sterling in the UK. This would ensure compliance with the draft public sector consumer code of conduct (see Annex F). It would also help customers to satisfy themselves that the conversion from sterling to euro had been done correctly, would avoid unnecessary queries and would facilitate understanding of the new currency.

3 CONVERSION OF STORED DATA

Introduction

All public sector bodies should identify whether they would need to convert stored data in the event of a changeover.

Key points

- Euro area countries generally converted stored data only when necessary. In a changeover, the UK would adopt a similar approach;
- Organisations would need to decide whether to convert stored data based on the business case for conversion;
- In the overwhelming majority of cases where organisations decide to convert stored data to euro and the data relates to a sterling currency transaction or record, the exchange rate for conversion would be the official euro/sterling rate. Appropriate EU conversion and rounding Regulations would apply; and
- The exception to the above (relevant to a small number of organisations) is where data relate to a foreign currency transaction in euro before T day. In this situation, existing business rules would apply.

What are stored data?

Stored data are defined as information held on systems (IT or otherwise) that existed before any introduction of UK euro notes and coins. This includes information generated or stored in either euro or sterling before T day. Data might be live (continues to be required for processing purposes) or dormant (unlikely to be required for operational purposes).

Examples include:

- earlier years' Self Assessment return data (the Inland Revenue);
- past VAT returns (HM Customs and Excise);

- records of agricultural grant payments (Department of the Environment, Food and Rural Affairs (Defra));
- records of benefit payments (Department for Work and Pensions (DWP));
- business survey data (Office for National Statistics (ONS));
- records of fines and fixed penalty payments (Court Service); and
- discretionary grant funding income and expenditure records (local authorities).

Why would stored data need to be converted?

It is unlikely that there would be any legal or regulatory requirement to convert the vast majority of stored data in a changeover. Existing legal requirements pertaining to the retention of data in the original form for use as evidence, should the need arise, would continue to apply. To avoid unnecessary expense, organisations should, in consultation with stakeholders, only convert data where there is a strong business case.

Stored data might need to be converted for a number of reasons, some of which are set out below:

Comparison purposes

Organisations might need to compare data produced in sterling before a changeover with data produced in euro after a changeover. For example:

- ONS is considering which of the economic series that feed into National Accounts would be converted to euro and for how many years. Some series have existed since 1948;
- the Inland Revenue would convert data from its NIRS2 (national insurance) database to maintain accuracy of future pension and benefit calculations;
- HM Customs and Excise might need to convert stored data from earlier VAT declarations;
- Defra might need to convert stored data to compare sets of annual accounts for schemes of aid payments; and
- local authorities might need to convert stored data to compare performance results and annual expenditure.

B Business issues for consideration

Business reasons

Organisations might have an IT system that can only deal in one currency. Organisations might therefore have payments and receipts in a different currency which needed to be converted. For example:

- DWP's IT approach to euro conversion would exclude the use of dual currency systems, thus avoiding functionality that might only be required for a short time. The intention would be to convert all data held on the live database to euro. Archived data would remain as sterling. This would mean that euro payments and values received pre-E day would be converted to sterling manually and input in that currency. Similarly, sterling payments and values received after E day (cash payments only until S) would be converted to euro prior to input.

This list is not exhaustive. There may be other business reasons for conversion.

Factors to consider

Costs and benefits

Costs of conversion might include:

- new or upgraded software and hardware;
- programming and testing required for the conversion exercise;
- system and human resources to process conversion;
- potential system downtime to implement the conversion; and
- the need for an audit trail.

These costs should be balanced against the benefits of:

- potentially easier and more accurate trend analysis; and/or
- avoiding operational difficulties that would arise by not converting data.

Conversion of financial information

Organisations need to consider whether all financial data should be converted or only balances or summaries (subject to any rounding regulations). Organisations might wish to adopt a different approach for different types of data but the chosen approach(es) should be made clear.

Use of data by different business areas

Where a decision was taken to convert only stored data that were live, it would be important that all business areas were fully consulted, as what might be live data for one business area might not be live data for another business area.

Timing of conversion

Organisations might need to convert data at different points during a changeover. The timing of conversion would not affect the exchange rate to be used.

During a transition period (between T day and E day) and prior to any IT systems changes coming into force, organisations might need to convert data for comparison or operational reasons. Organisations might also see a rise in the volume of euro denominated transactions before E day, with conversions to sterling necessary where systems were not yet operating in euro.

After E day, organisations might need to convert data received in sterling or convert some or all of previous years' financial data. Business reasons might include:

- making amendments to financial information in earlier years or to review or re-open past years for audit and investigations;
- converting closing account balances at the point of internal conversion;
- using stored financial information as part of financial calculations in current euro periods; and
- converting past period information for financial trends and statistics.

How should data be converted?

Any data conversion should apply the appropriate exchange rate.

The exchange rate to be used in converting stored data to euro would be the rate agreed at the time of joining EMU except as otherwise required by UK or European Union legislation.

Note that, in the vast majority of cases, the exchange rate which prevailed at the time the original data were stored would not be relevant for the subsequent conversion. The official rate should be used.

An exception would relate to assessment of foreign currency claims which involved evidence or data submitted in euro prior to T day. This would be of relevance only to organisations that assess claims using foreign currency data. Existing business rules would apply.

Good practice in converting data

- **Audit trail** – the National Audit Office (NAO) might require an audit trail to transaction level. The NAO would be willing to guide organisations about the systems required to provide an acceptable audit trail;
- **Archiving and access arrangements for original data** – original data should still be accessible. This might not be possible with new software; old computer software or hardware or the original material in hard copy might need to be retained to ensure access. There should be clear archiving policies for each system;
- **Back-up copies** – where full databases were converted, a back-up copy should be retained at conversion dates, perhaps held on separate read-only databases;
- **Legal requirements** – organisations should consider any potential legal requirements for presenting financial information in cases where information was contested. For example, in a dispute over payment, only the original record of the actual amount paid might be admissible as evidence;
- **Data Protection Act requirements** – where data referred to living individuals, any conversion would need to comply with the Data Protection Act. This should not pose a problem, but organisations should seek advice from their legal advisers prior to any conversion;
- **Communication** – where data represented converted amounts, this should be clearly stated in any outward-facing communication. Organisations should also consider how best to advise customers that calculations had been processed using converted data and how the conversion had been derived;
- **Conversion discrepancies and reconciliation issues** – conversion of data using individual transactions or summary balances might lead to different sums because of rounding errors; and
- **Accuracy of data for audit and investigation purposes** – where the same data were held by different parties, the interested bodies should discuss whether similar treatment with respect to conversion was required. Where it was agreed to adopt a different approach, bodies should make clear the reasons for this and the different approaches to be adopted.

4 INPUT HANDLING

Issue

Organisations need to consider how systems would handle input data, both in paper and electronic form, during a transition period and around a UK E day.

Forms

Organisations need to decide the extent to which there would be a demand to submit euro information during a transition period. If a demand exists, policy is that the public sector should support the changeover in the rest of the economy. There would be a question over whether to operate separate sterling and euro forms, or to have a single multi-currency form. Advantages of having separate forms would include the fact that euro forms would be ready for use at the time of a withdrawal of sterling. Separate forms might also make the currency of financial information clearer. However, disadvantages include the fact that there would need to be a system for ensuring that the right form is sent to the right customer (see section 1 of this Annex on “customer preference”).

Financial data

From a UK E day onwards, all financial inputs which relate to a euro period should be in euro. In rare cases where sterling data were received for a euro period, organisations would need to decide whether it should be returned or converted to euro and processed. Organisations would need to decide the date of their first euro period, following which point financial information would have to be in euro. It can be assumed that all payments made after a UK E day would be in euro, unless the payment were to be made before a withdrawal of sterling in the UK and in cash. However, financial data that related to an historic sterling period could still be accepted and processed.

Field sizes

Euro forms and input screens might require larger amount boxes than sterling forms and screens, because sterling amounts would be likely to translate to larger euro amounts.

Retrieval

All financial input would need an indication of the currency in which the data was submitted. Original data should still be accessible. This might not be possible with new software or hardware, or the original material in hard copy might need to be retained to ensure access. There should be clear archiving policies for each system. Further guidance on archiving can be found on page 148 of the *third outline National Changeover Plan*.

An example approach

- Use separate euro-specific paper forms for euro input together with a system of euro notification.
- Data received during a transition period should be input in the currency in which it is received and, if necessary, converted for processing. Indicate in which currency the data was received.
- Data relating to a euro period should be input in euro, converting from sterling if necessary. Create enough space on forms and in systems for larger euro amounts.

5 OUTPUT HANDLING

Issue

Organisations need to consider how systems would handle output data, both in paper and electronic form, during a transition period and around a UK E day.

Currency

The draft public sector consumer code of conduct (see Annex F), states that dual currency information in sterling and euro should be provided for consumers, in an appropriate form, from at least four months prior to a UK E day at least until the withdrawal of sterling notes and coins is completed. See section 2 of this Annex on “currency of inputs and outputs” for more details.

All output should clearly distinguish euro data from sterling data (see section 7 of this Annex on “currency recognition”).

Field sizes

Euro forms and output screens might require larger amount boxes than sterling forms and screens.

Retrieval

All financial input would need an indication of the currency in which the data was submitted. Original data should still be accessible. This might not be possible with new software or hardware, or the original material in hard copy might need to be retained to ensure access. There should be clear archiving policies for each system. Further guidance on archiving can be found on page 148 of the *third outline National Changeover Plan*.

Discrepancies

Organisations would need to consider how to handle horizontal rounding differences on output to customers. They might consider printing an explanation on output (stating that small discrepancies might arise due to rounding). See section 8 of this Annex on “conversion and rounding”.

An example approach

- During a transition period, all sterling customers would receive output in sterling with a translation to euro of key amounts from the point in a transition period when euro services are introduced for a business system, at the start of the last sterling period prior to a UK E day or four months prior to a UK E day, whichever is earliest. Euro customers would receive figures in euro with key amounts translated to sterling.
- From a UK E day to a withdrawal of sterling in the UK, all output for euro periods would be in euro with a translation to sterling of key amounts.
- Following a withdrawal of sterling in the UK, all output for euro periods would be in euro only. For amendments made to historic sterling periods, output would be shown in sterling with a translation to euro of key amounts.

6 SCREEN DISPLAY

Issue

Organisations need to consider how they would display data on screens during a transition period and around a UK E day. Any decision would be closely influenced by policies on input handling and output handling. See sections 4 and 5 of this Annex on “input handling” and “output handling”.

If an organisation does not propose to accept euro information during a transition period, a general approach might be that data would be displayed in sterling prior to system conversion. In line with the draft public sector consumer code of conduct (see Annex F), from a minimum of four months prior to a UK E day, all sterling systems that issue output to external customers would also display a translation to euro of key amounts.

However, if the organisation proposes to accept euro data during a transition period, then a guiding principle might be that the screen would display the same currency information as provided to or by the customer or supplier. The main options for displaying this information would be:

- toggling between currency screens; or
- having dual display on a single screen.

B Business issues for consideration

Consideration also needs to be given to how the different currencies would be distinguishable to avoid errors. Options include displaying different colours for different currency fields or screens, using currency symbols, or displaying currency names in full (see section 7 of this Annex on “currency recognition”). From a UK E day onwards, data should be displayed in euro or the currency in which it was submitted. A facility to display the data in the other currency is required in some circumstances under the terms of the draft public sector consumer code of conduct (see Annex F). Euro screens may require larger amount fields than sterling screens, because sterling amounts would be likely to translate to larger euro amounts.

An example approach

- At the start of an agreed period prior to a UK E day, but in any event from at least four months prior to an E day, all sterling systems that issue output to external customers would display a translation to euro of key amounts.
- During a transition period, toggling between currency screens should be facilitated if the system in question needs to support euro input/output.
- From a UK E day onwards, data would be displayed in euro or the currency in which it was submitted, with a facility to display it in the other currency also. The currency in which the data is being displayed should be clearly apparent.

7 CURRENCY RECOGNITION

Issue

Organisations need to consider how they would ensure that the euro could be clearly distinguished from sterling on input and output.

Options include:

- using the notification EUR;
- using the glyph €;
- using colour;
- using the full name for the currency;
- using watermarks; and
- using logos.

These options are not mutually exclusive, and could be used in combination.

An example approach

- Adopt the euro symbol (€), rather than EUR, as the euro standard for all output, including screens, forms and leaflets.

- Include the euro symbol on all new keyboards, keyboard mapping tables, printers and printer drivers.
- Ensure that all output handling services can print the euro symbol in line with respective system implementation dates.
- Ensure that all stationery used by the organisation, including computer produced and pre-printed stationery, is euro compatible in line with respective system implementation dates.

8 CONVERSION AND ROUNDING

What is conversion and rounding?

Conversion is the arithmetic process by which amounts expressed in a National Currency Unit (NCU) – sterling for the UK – are converted into euro, and vice versa, using a fixed conversion rate. This process is governed by a set of rules laid down by the European Council of Ministers. For the euro area, this was Regulation 1103/97.

The conversion process often produces amounts expressed to a large number of decimal places. As a result, the European Council of Ministers has also laid down rules on how monetary amounts should be “rounded” after conversion to produce more manageable amounts.

These rules – often referred to as the European Union (EU) conversion and rounding rules – do not currently apply to sterling, but the strong working assumption is that similar or identical rules would apply following any UK decision to join. They outline that:

Conversion rates between the NCUs of participating countries and the euro are officially fixed and defined to six significant figures. In these examples, we use a fictional rate of $€1 = £0.456789$.

Only the official conversion rate may be used when converting from an NCU to euro (and vice versa). The rate cannot be rounded or truncated and no inverse rates should be used (e.g. $£1 = €2.18919$). This means that to convert an NCU amount into euro you must divide the NCU amount by the official conversion rate. To convert from euro into an NCU you must multiply by the conversion rate.

Converted monetary amounts should generally be rounded to the nearest currency sub-unit. This means that amounts converted into euro should be rounded to the nearest cent. Similarly, amounts converted into an NCU should be rounded to the nearest sub-unit of the NCU in question (in the case of sterling, this would be pence). It should be noted, however, that this rounding rule does not affect any national rounding practices providing for a higher degree of accuracy in intermediate calculations (e.g. if the price of a litre of petrol is traditionally expressed to a fraction of a penny in the UK, the equivalent euro price could equally be expressed to a fraction of a cent. Rounding to the nearest cent would only have to take place at the time of payment). It also does not interfere with any national rounding rules or practices which

B Business issues for consideration

may be of relevance for the computation of monetary amounts but which are not intrinsically related to the actual translation operation (e.g. the practice of rounding completed tax returns to whole currency units – allowed in a number of euro area countries as well as the UK– is not affected by the EU rules).

Conversions between NCUs of countries going through a transition to the euro at the same time have to be converted via a process known as “triangulation.” This means that the initial NCU amount must first be converted into euro. In a second step, the euro amount can then be converted into the desired NCU. The intermediate result in euro can be rounded, but not to less than 3 decimal places.

Converting and rounding an NCU or euro amount according to these rules delivers an amount that is legally equivalent to the original amount. This concept of “legal equivalence” underpins the translation of monetary amounts during a changeover.

What issues arise in relation to conversion and rounding?

Conversion and rounding issues can arise throughout a changeover, whenever NCU amounts are translated into equivalent euro amounts (or vice versa) to provide dual currency information, to accept euro payments against an NCU liability (or vice versa) or to process data within systems.

Some of the key conversion and rounding issues which were encountered in the euro area are set out below.

Thresholds and tables

An issue that arose across the euro area is the translation of monetary amounts used in thresholds and tables. In particular, where euro values are presented for tables that include numerical ranges, apparent gaps may arise.

Example: Fictional tax thresholds defined using our fictional rate

£	≤1000	1001 – 2000	2001 – 3000	>3000
€	≤2189.19	2191.38 – 4378.39	4380.58 – 6567.58	>6567.58

Conversion rate: €1 = £0.456789

In this example, gaps between ranges appear when amounts are expressed in euro. An amount of €2190, for example, is not defined.

Horizontal rounding discrepancies

Horizontal rounding discrepancies arise from the translation of an NCU amount into euro (or vice versa) followed by a retranslation to the original currency unit. This might take place, for example, in IT systems – with euro inputs being translated into sterling for processing, before being retranslated to euro on output. Small differences can result from the rounding that is inevitable with each translation – meaning that the euro output might be slightly different to the euro input. This can cause presentational issues and problems within IT systems.

Example: Translation of a euro amount into sterling and retranslation into euro using our fictional rate

$$€1459.00 \times 0.456789 = £666.4552 = £666.46$$

$$£666.46 \div 0.456789 = €1459.0106 = €1459.01$$

Conversion rate: €1 = £0.456789

Vertical rounding discrepancies

Vertical rounding discrepancies are unrelated to horizontal rounding discrepancies. They occur where items translated from one currency to another are used in any kind of calculation. For example, if a series of converted and rounded amounts are added together, the sum will only rarely match the converted and rounded total of the original amounts.

Vertical rounding discrepancies can arise wherever there are calculations (including additions, subtractions, multiplications and divisions) and occur most commonly within IT systems. Some of the rounding discrepancies cancel out, but in other cases, they systematically accumulate. As in the case of horizontal rounding discrepancies, this can create presentational issues and problems within IT systems.

The transitional problem of vertical rounding should be properly covered in Government communications. Unless there are serious operational consequences, the reckonable amount for a transaction should be the total, converted and rounded in accordance with the Regulations, rather than the sum of the converted and rounded components.

B Business issues for consideration

Example: Sales receipt in euro and sterling using our fictional rate

	€	£
1 shovel	35.31	16.13
5m wire	2.52	1.15
Paint	9.08	4.15
1 brush	9.42	4.30
1 screwdriver	31.45	14.37
20kg garden compost	38.85	17.75
Total	126.63	57.85 (= €126.64)

Conversion rate: €1 = £0.456789

In this example, the sum of the amounts in euro is €126.63. However, if each individual amount is translated into sterling before the addition, the final result is £57.85, which converts to €126.64 – a difference of 1 cent.

Payments and settlement

Some euro area countries found that payments received in one currency unit against an invoice or official demand (e.g. a tax demand) expressed in the other currency unit might not satisfy the liability in question precisely. For example, a Spanish bank customer who wished to pay a peseta invoice in euro might have made the translation on his or her own initiative. The payment order would then be transferred by his or her bank to the creditor's bank which would retranslate the euro amount into peseta. Horizontal rounding errors may arise as a result of this translation and retranslation and, as a result, the debt may not be discharged in full.

This raises questions about when a liability or debt is satisfied. It can also create accounting issues in reconciling amounts and generate system error messages or automatic reminders for fractional amounts.

An example approach

During a transition period:

- handle horizontal discrepancies within IT systems and include an explanation on output; and
- minimise vertical rounding discrepancies by converting at total level rather than line by line.

At and after a UK E day:

- convert closing balances (not underlying transactions) and reconcile at a high level. Refer discrepancies to suspense account; and
- convert stored data only where there is a business need.

C Checklists for building in euro compatibility

Checklist for building in currency neutrality

NB: Do not accept, without a full understanding of what the statement means, a vendor's statement that currency neutrality provides sufficient euro compatibility to meet your business requirements.

Do not:

- embed £ signs or sterling descriptors in screen designs or code;
- include £ signs or sterling references in data names;
- embed sterling amount parameters in code;
- make references to £ signs or sterling in any narrative associated with the documentation; and
- include references to sterling in help text.

Do:

- ensure screen designs have space to add a currency symbol for amount fields;
- increase the size of amount fields on screens, forms and other output by one character to allow for an increase in the size of currency amounts;
- increase the size of amount fields on databases and in files by one character to allow for an increase in the size of currency amounts to be stored;
- design printing of output forms and lists to allow for the possible inclusion of dual display of key amounts in another currency;
- design printing of turn round forms to allow for more than one currency to be used; and
- upgrade third party products – e.g. infrastructure software, application products, printers and keyboards – to validated euro compatible versions.

Checklist for building in the basic elements of full euro compatibility

In addition to the “dos” and “do nots” for building in currency neutrality, the following “dos” and “do nots” should be considered for any system designed to go beyond currency neutrality.

Do not:

- devise and use a non-standard currency conversion routine;
- design numeric checks with zero tolerance where the elements of the check are derived from sums carried out in different currencies;
- delete data from a system or convert it from sterling into euro without first archiving the data in a retrievable form, subject to specific business requirements;
- increase the number of decimal places currency data is stored to;
- assume that spreadsheet models can be easily converted by a utility; and
- introduce euro currency identifiers other than € or EUR.

Do:

- design currency neutral logic;
- where multi-currency functionality is to be used for business reasons, ensure appropriate use of currency indicators;
- use any standard centrally designed and produced currency conversion routine used by your organisation;
- design currency neutral forms that can provide the necessary level of currency recognition using electronic overlays;
- design application enhancements (using currency neutral systems with currency or historic year identifiers where appropriate) to manage the necessary currency conversion routines and to handle any input, output, interface and screen in more than one currency;
- design for minor rounding discrepancies to occur and, where required by the business, to be accounted for. These will be managed as per business requirements;
- design for flexibility and modularise any euro changes so that they can be easily revisited in the event of requirement, design or phasing changes, or be disabled and remain hidden;
- ensure screen designs have space to add a currency identification icon and a screen toggle trigger;
- ensure form designs have space to add a currency identification icon and one or more additional summary lines as required;
- establish an archiving policy and retrieval system for any data before deleting it or converting it from sterling to euro; and
- plan to rebuild spreadsheet models rather than attempt a manual conversion.

D Some typical euro requirements

This annex is in the form of a questionnaire that shows one organisation's view of the euro requirements that could apply to new systems being developed or procured to be euro compatible. The list is not exhaustive, nor is it necessary for new systems to meet every requirement. The extent to which these requirements are built into the new system would depend on the senior responsible owner's view of business requirements.

- A yes or no answer should be given to each question.
- If a requirement does not apply, a no answer should be entered along with a summary explaining why it does not apply.
- If a requirement does apply, a yes answer should be entered along with a brief summary of how the function is affected, design criteria being adopted to deliver the solution and any potential problems.

Ref	System Requirement	Response (Y or N)	Justification	Euro Programme comments
1	Is the system being built currency neutral?			
2	Will the system accept and capture data in euro as well as sterling from E day?			
3	Will screen designs follow any euro screen design requirements as set by your organisation?			
4	Will financial data be retrievable in the exact currency and value of submission?			
5	Will the system be able to accept euro and sterling payments and process them automatically?			
6	Will the system be able to collect and recover debts and arrears in euro from E day?			
7	Following the end of the dual currency period, will the system cease to accept sterling payments?			

D Some typical euro requirements

Ref	System Requirement	Response (Y or N)	Justification	Euro Programme comments
8	Will the system provide a euro summary line? If so, will it conform to any euro screen and form design requirements as set by your organisation?			
9	Will the system provide a sterling summary line? If so, will it conform to any euro screen and form design requirements as set by your organisation?			
10	Will data and calculations be consistently displayed in only one currency?			
11	Will screen displays be switchable between currency in accordance with any euro screen design requirements as set by your organisation?			
12	Will there be a facility for selecting currency of input prior to starting data capture? Note that screen toggling will not be permitted on data capture screens.			
13	Will output issued before E day, which relates to a financial period commencing on or after E day, be issued in euro?			
14	After E day will the system be able to reprint output in the currency originally printed?			
15	From E day will output be in euro for transactions relating to a euro period?			
16	Will all payments and repayments be made in sterling until E day?			

Ref	System Requirement	Response (Y or N)	Justification	Euro Programme comments
17	Will all payments and repayments be made in euro from E day onwards?			
18	Will the default currency of data display be sterling for sterling periods and euro for euro periods?			
19	Are the corporate currency identifiers being used in accordance with any euro screen and forms design requirements as set by your organisation?			
20	Are paper euro forms being developed?			
21	Will notes, leaflets, booklets and posters be updated to include references to euro instead of (or as well as) sterling?			
22	Will IT infrastructure be upgraded to provide euro functionality?			
23	Has the capability of printing the euro symbol (€) on printed output been confirmed?			
24	Is there sufficient printing capacity to handle new euro forms as well as existing sterling forms?			
25	Does electronic input and output clearly distinguish between euro data and sterling data?			
26	Will system-specific Internet and Intranet pages be updated to include euro references and to replace sterling references, as appropriate?			

D Some typical euro requirements

Ref	System Requirement	Response (Y or N)	Justification	Euro Programme comments
27	Will internal and external customers be targeted with publicity and educational material in accordance with the euro communications strategy (see the <i>third outline National Changeover Plan</i>)?			
28	Will manual exception processes be enhanced to deal with incorrectly completed forms?			
29	Will memos, instructions and on line help be updated to include euro references and to replace sterling references, as appropriate?			
30	Will training packages be updated to include euro references and to replace sterling references, as appropriate?			
31	Will adequate education/training of staff and customers be provided to support the changeover to euro?			
32	Will conversions to or from euro be done in accordance with EU rules?			
33	Will rounding of amounts following conversion follow EU rules?			
34	Will it be possible to convert data between sterling and euro and vice versa?			
35	Will an aggregated account of rounding discrepancies, in accordance with business rules, be defined and maintained?			

Ref	System Requirement	Response (Y or N)	Justification	Euro Programme comments
36	Will rounding discrepancies caused by system conversion of monetary amounts when the default currency of the system changes from sterling to euro be recorded and accounted for?			
37	Will the system carry out a balance reconciliation before and after conversion to euro and account for any discrepancy?			
38	Will the system account for all transactions in euro following the change of default currency?			
39	After E day will data for sterling periods be captured and processed in sterling with balances carried forward to euro periods being converted to euro?			
40	From E day will all input, output and processing for current and subsequent periods be in euro?			
41	Will losses and reliefs carried back to periods that ended before E day be converted to sterling?			
42	From E day will management information be in euro where appropriate?			
43	Will sterling references in legislation and administrative provisions be superseded by euro references?			

D Some typical Euro requirements

Ref	System Requirement	Response (Y or N)	Justification	Euro Programme comments
44	Will IT system performance requirements specified in the scope of work remain unaffected by changes arising from euro work?			
45	Will system migration to a euro processing base be constrained by interface currency definition?			
46	Will software and hardware not supported under managed service by IT suppliers be upgraded or replaced to enable euro functionality?			
47	Will the system use any appropriate conversion tool for your organisation?			
48	Will your system need to use any corporate euro currency conversion calculator for your organisation?			
49	Will euro IT functionality only be enabled when it is required?			

E Wording for procurements

EXAMPLES OF CONTRACTUAL CLAUSES ADDRESSING EURO REQUIREMENTS

It is strongly recommended that legal advice be obtained when drafting contractual documentation requiring euro compatibility.

The following are examples of contractual clauses that address euro requirements. These examples can also be tailored for use in statements of requirements and other tender documentation. Organisations should use the procurement process to ascertain how euro compliance will be provided, rather than accepting a simple statement that it will be provided. Functional/service demonstrations and the take up of references are good practice when evaluating tenders. Euro software/service provision, like any all other software/service provision should also be the subject of rigorous testing prior to acceptance and implementation.

EXAMPLE 1

High level contractual wording in a services contract, requiring software and systems used to provide services to be capable of managing and processing both sterling and euro.

The software and systems used in the performance of the services shall be capable of accepting and processing payments to and from the Authority (including accounting for payments) in both sterling and in euro including during any transition phase during which both euro and sterling are legal tender in the United Kingdom. The software and systems should also provide dual currency information in sterling and euro for consumers, in an appropriate form, in line with the public sector consumer code of conduct [consider whether you need to specify minimum time requirements in excess of the code].

EXAMPLE 2

For systems or software where the Authority requires the system/software to be capable of upgrade subject to a further charge to be paid by the Authority to the Contractor. Note that the cost should be determined as part of the procurement process.

The Contractor shall ensure that the system/software shall be capable of upgrade prior to the commencement of any transitional period prior to the implementation of the euro by the United Kingdom government (or, if such transitional period commences prior to the commencement of the Acceptance Procedures Period, prior to the commencement of the Acceptance Procedures Period) such that, subject to the payment by the Authority of the agreed Charges, as specified in Schedule X (Charges Schedule), it meets the euro requirements as set out in Schedule Y. [Organisations need to define what they require in order for the system/software to meet their euro-specific business needs, using this guidance as a reference point].

EXAMPLE 3

For systems or software where the Authority requires the system/software to be capable of managing and processing both sterling and the euro. This is equally relevant whether referring to the system/software used in the performance of the services or the system/software required to be supplied under the agreement. However, the relevant provision will need to specify which of these is being referred to.

The Contractor shall ensure that the system/software meets the euro requirements as set out in Schedule Y. [Organisations need to define what they require in order for the system/software to meet their euro-specific business needs, using this guidance as a reference point].

EXAMPLE 4

Invoicing: wording for any contract where the Contractor submits invoices to the Authority. Used to enable the Authority to manage the timing of a change in the invoicing currency during a transition period.

The Contractor shall submit invoices in UK Pounds Sterling. In the event that the United Kingdom joins the European Monetary Union (and provided always that the exchange rate for conversion between sterling and euro has been fixed), the Authority shall, at any time thereafter, upon giving 3 (three) months' written notice to the Contractor, be entitled to require the Contractor at no additional charge to convert the charges from sterling to euro. The Contractor shall thereafter submit all invoices pursuant to this agreement denominated in euro and the Contractor shall accept all payment from the Authority in euro.

F Draft public sector consumer code of conduct

Overall aim

To ensure that citizens can be confident that they would be treated fairly during a changeover. Consumers would be provided with adequate, targeted and easily understood information to help them through a changeover, and a contact point if they felt that standards of service were not being provided in accordance with this code. The public sector would be expected to show a strong lead in best practice during a changeover.

The details below cover the minimum standards that would be met by all public sector service providers. Implementation would naturally depend to some extent on the nature of the service provided and the relationship with the consumer. Some public sector service providers might wish to provide additional or earlier euro facilities.

This code outlines how a public sector service provider would act in the different phases of a changeover.

What happens and when?

1. Up to T day (before joining EMU)

1.1 There would be no immediate change to transactions between the service provider and the consumer. Payment for services would continue to be in sterling; euro would not be legal tender in the UK. This applies to cash payments and non-cash payments. Prices would continue to be displayed in sterling.

1.2 Service providers might choose to accept payment in euro, but would be under no obligation to do so. Service providers who accepted euro payments might apply their own exchange rate and a handling charge, but the terms would be made clear at the point of transaction.

2. T day to E day (from the start of the transition to the introduction of euro notes and coins)

2.1 From at least four months before E day, euro price information should be shown alongside sterling. Prices should be converted at the official six-figure conversion rate. The converted euro value would then be rounded to the nearest euro cent to give the legally equivalent euro value, in accordance with the EU conversion and rounding Regulations.

2.2 Service providers would continue to be under no obligation to accept euro cash. If they did, they could continue to apply a handling charge, but the terms must be made clear at the point of transaction.

2.3 Electronic euro payment services would be introduced gradually during the transaction period. Payments made in euro at, for example, a point of sale (PoS) terminal, would be automatically converted by the banks to sterling for customers with sterling accounts. There would be no additional charge and the same clearing period.

2.4 As soon as a service provider offered any form of euro service, notices should be displayed at customer interfaces, including websites for internet transactions, to indicate which forms of payment (if any) would be accepted in euro, and from what date. The official six-figure exchange rate and any handling charge applied should also be made clear.

2.5 If change were given for a euro transaction, it could be either in euro or sterling to the legally equivalent value.

2.6 From at least four months before E day, where it is customary to issue a receipt for a service, this should show both the sterling and euro equivalent prices if the issuing equipment was capable of doing so. If that was not technically feasible, the price shown should continue to be in sterling until E day and in euro thereafter.

2.7 The euro € sign or currency indicator EUR should precede the euro price (e.g. €7.25 or EUR 7.25) and be clearly distinguishable from a price displayed in £ sterling.

3. E day (the introduction of euro notes and coins in the UK)

3.1 From E day, prices should be displayed in euro. Wherever prices are displayed now, including in information and promotional materials, sterling price information should continue to be displayed until at least the end of the dual circulation period when sterling notes and coin would cease to be legal tender (two months after E day). Service providers might continue to dual display in sterling after this point if they wish to offer this service to customers, but it is recommended that this should not continue longer than 18 months after the introduction of euro cash.

3.2 For payment in cash, customer service interfaces should accept either sterling or euro until the end of the dual circulation period. For payments accepted in sterling, the fixed conversion rate must be applied. No handling charges would be applied for euro or sterling payments.

3.3 Coin-vended services, such as parking meters, would not need to accept both sterling and euro. However, all machines should be clearly marked to indicate to users whether they accepted euro only or sterling and euro. For a very short time after E day operators might still have some machines accepting sterling only, but they should be converted to euro as soon as possible and within the two month dual circulation period.

3.4 Coin-vended services might require a euro conversion to be smoothed to an operationally practical value. Any smoothing of converted euro amounts in the public sector should not disadvantage the citizen. Smoothing should be avoided where at all possible (so, for example, if £1 bought 60 minutes of parking time, €1 might buy a different number of minutes, so that the price per hour would be the same in both currencies).

3.5 Change tendered in cash transactions for services should be in euro only.

3.6 From E day, all non-cash transactions should be in euro only, except that cheques drawn in sterling that predate E day would continue to be valid for up to six months from the date of issue.

4. Throughout a changeover

4.1 The needs of vulnerable groups, such as older people, the visually and hearing impaired and those with learning difficulties, should be taken into account. Service providers should consult with representatives of vulnerable groups to develop a suitable method of addressing these needs.

4.2 All staff dealing directly with the public should be fully trained and able to give straightforward and relevant information about services during a changeover.

4.3 The consumer code euro logo would be displayed at all points of transaction and provide a customer service contact number for euro enquiries.

G An interpretation of technical terms

This annex provides an interpretation of the technical terms used in this document.

It should be noted that the interpretations given are intended to facilitate discussion and understanding within the public sector. They should not be regarded as definitive or comprehensive in any way.

Conversion

The arithmetic process by which amounts expressed in a National Currency Unit – for example, the pound – are converted into euro, and vice versa, using a fixed conversion rate.

The conversion process is governed by a set of rules laid down by the European Council of Ministers – the European Union (EU) conversion and rounding rules. These are outlined in Council Regulation (EC) No. 1103/97. Converting and rounding an NCU or euro amount according to these rules delivers an amount that is legally equivalent to the original amount. This concept of “legal equivalence” underpins the translation of monetary amounts during a changeover.

The EU conversion and rounding rules are directly applicable in all EU member states (including the UK) in relation to the currencies of countries that have joined the single currency. They do not currently apply to sterling, but the strong working assumption is that similar or identical rules would apply following any UK decision to join.

Conversion can produce amounts expressed to any number of decimal places.

System conversion

The process of changing the currency in which a system operates.

Dual display

Dual currency information in sterling and euro for consumers should be provided, in an appropriate form, in line with the draft public sector consumer code of conduct (see Annex F), from at least four months prior to a UK E day, at least until the withdrawal of sterling notes and coins is completed.

In the case of organisations providing financial information to customers during a transition, and at least until the withdrawal of sterling notes and coin, this might mean providing a translation of key amounts to the other currency.

Example of dual display on a bank statement

This example uses a fictional exchange rate of €1 = £0.456789

A bank account before conversion to euro, showing a euro transaction and dual display of balance

Current Account	IBAN	GB11 BANK 0000 0000 0000
Statement, 01/XX/XX	Account name	Penny Sterling
	Statement number	64

Transactions originated in euro have been converted at the official conversion rate of €1 = £0.456789

Date	Description	In	Out	Balance
				£300.00
01/XX/XX	Debit Card Payment Supermarket		£64.50	£235.50
01/XX/XX	Cheque – 100124	£46.00		£281.50
02/XX/XX	Direct Debit – Life Insurance			
	€22.00		£10.05	£271.45
02/XX/XX	Direct Debit – Gas		£25.00	£246.45
03/XX/XX	ATM Withdrawal		£50.00	£196.45
	Balance carried forward			£196.45
	Euro equivalent for information only			€430.07

Euro area

The term used to describe those countries which have joined the single currency. Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain joined the single currency on 1 January 1999. Greece joined on 1 January 2001.

E day

The day on which euro notes and coins are first issued as legal tender in a participating country.

Fixed conversion rate

The rate of exchange at which the euro and a National Currency Unit (NCU) are locked.

Fixed conversion rates are defined in the form €1 = x NCU and are set to six significant figures. For example, the rate for the Irish punt was set at €1 = IEP 0.787564, while the rate for Italian lira was set at €1 = ITL 1936.27.

Legacy currency

The former currency of a participating member state which becomes a sub-denomination of the euro at the date of entry.

National Currency Unit

See legacy currency.

Redenomination

The process of changing the currency in which a monetary amount (for example, a price, a benefit payment, a tax threshold) is set.

During a changeover to the euro, all monetary amounts set in a National Currency Unit have to be redenominated in euro. For many public sector monetary amounts this may require legislation. Redenomination is a one-off event for each monetary amount, usually taking place towards the end of a transition period.

Rounding

The process by which converted legacy currency and euro amounts are rounded to produce more manageable amounts. The EU conversion and rounding rules dictate that converted monetary amounts should generally be rounded to the nearest cent or legacy currency sub-unit.

A converted amount rounded according to the EU rules is legally equivalent to the original legacy currency or euro amount.

System

Wherever reference is made to a system in this guidance, this should be taken to include services as well.

T day

The day on which the euro becomes the legal currency of a participating country and the exchange rate between the National Currency Unit (NCU) and the euro is irrevocably locked. The euro replaces the NCU in question at the fixed conversion rate.

Transition period

The period from the day on which the euro becomes the legal currency of a participating country (T day) and the day on which electronic transactions in a National Currency Unit are no longer legal, and euro notes and coin are introduced (E day).

Translation

The process of converting and rounding a monetary amount according to the EU conversion and rounding rules.

A “translated” amount is legally equivalent to the original amount.

Triangulation

The method laid down by the EU conversion and rounding rules for converting between two National Currency Units. It should be noted that triangulation is only applicable to conversions between NCUs of countries going through a transition period at the same time.

According to this method, the initial NCU amount must first be converted into euro. In a second step, the euro amount can then be converted into the desired NCU. The intermediate result in euro can be rounded, but not to less than 3 decimal places.

Other algorithms (e.g. implicit bilateral rates) may only be used if they produce one of the results possible under the triangulation method. It should be noted that it is now generally accepted that it is not possible to find a method that is guaranteed to produce the same level of accuracy as triangulation.

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