



FINANCE AND PROCUREMENT

RES/PRO/DELE/RB(2013)01246

Thessaloniki, 13 June 2013

OPEN INVITATION TO TENDER

AO/RES/ASAIN/BMS/009/13

Building Management System (BMS) - Delivery, Installation and Supporting Services'

REF: Contract Notice – 2013/S 109 -185517 of 07/06/2013

Dear Sir/Madam,

We thank you for the interest you have shown in this tender.

The purpose of this tender and additional information necessary to present a tender can be found in the attached Tender Specifications. You should note however the following important points concerning the submission of a tender and its implications.

1. Tenders should be submitted preferably in English, but in any case in one (or in any) of the official languages of the European Union.
2. Tenders may be submitted exclusively in one of the following ways:
(a) by post to be dispatched not later than **the date and time specified in the timetable in point 8 below**, in which case the evidence shall be constituted by the date of dispatch on the postmark or the date of the deposit slip, to the following post address of Cedefop:
European Centre for the Development of Vocational Training (Cedefop),
Procurement Service, Attention of Mr G. Paraskevaïdis
PO Box 22 427
GR – 55102 Thessaloniki, Greece

Important:

Tenderers shall inform Cedefop by e-mail (c4t-services@cedefop.europa.eu) or fax (+30 2310 490028)

- ✓ that they have submitted an offer in time, and
- ✓ that they request Cedefop to confirm receipt of the e-mail or fax.

Do not attach your offer to any of the above information e-mail or fax.

or

(b1) by courier service to be dispatched not later than **the date and time specified in the timetable in point 8 below**, in which case the evidence shall be constituted by the date of dispatch to the address below or the date of the deposit slip,

or

(b2) delivered by hand not later than **the date and time specified in the timetable in point 8 below**, in which case a receipt must be obtained as proof of submission, signed and dated by the official in the above mentioned Service who took delivery, to the following address (for points **(b1)** and **(b2)**):

**European Centre for the Development of Vocational Training (Cedefop),
Procurement Service
Attention of Mr G. Paraskevaidis
123, Europe Str, GR-57001 Thessaloniki-Pylea
Tel: +30 2310 490111 / 490 064**

Please note that Cedefop is open from 09h00 to 17h00, Monday to Friday. It is closed on Saturday, Sunday and Cedefop holidays.

3. Tenders must be submitted strictly adhering to the following. Tenders must be submitted in a sealed envelope itself enclosed within a second sealed envelope. If self-adhesive envelopes are used, they must be sealed with adhesive tape and the sender must sign across this tape.

The **outer envelope**, addressed simply to Cedefop (address depending on the means of submission, see point 2 above), should only bear additionally **the name and address** of the sender.

The **inner envelope**, addressed to the Procurement Service as indicated under point 2 above, must bear a self-adhesive label with the indication **“Open Invitation to tender – Not to be opened by the internal mail service”** and all the necessary information, as shown below:

<p>OPEN INVITATION TO TENDER</p> <p>CEDEFOP No: AO/RES/ASAIN/BMS/009/13</p> <p>‘Building Management System (BMS) Delivery – Installation and Supporting Services’</p> <p>Name of tenderer:</p> <p>NOT TO BE OPENED BY THE INTERNAL MAIL SERVICE</p>
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The inner envelope must also contain **three sealed envelopes, namely, Envelope A–“Supporting Documents”, Envelope B–“Technical Proposal” and Envelope C–“Financial Proposal”**. The content of each of these three envelopes is described in point 6 of the attached tender specifications.

4. Tenderers must ensure that their tenders are signed by an authorised representative and that tenders are legible. It is mandatory to include in the offer a cover letter, signed by the person/s that is/are authorised to sign the contract in case of contract award, stating that the tenderer accepts in full and without restriction the requirements of these Tender Specifications, and the Special and General conditions governing this contract as the sole basis of this tendering procedure (see also point 1 of the Tender Specifications).

5. Submission of a tender implies acceptance of all the terms and conditions set out in this invitation to tender, in the specifications and in the draft contract and, where appropriate, waiver of the tenderer's own general or specific terms and conditions. It is binding on the tenderer to whom the contract is awarded for the duration of the contract.
6. The opening of tenders will take place at Cedefop on **the date and time specified in the timetable in point 8 below**. Each tenderer may be represented at the opening of tenders by one person. The name of the person attending the opening must be notified in writing by fax (+30 2310 490028) or by e-mail (C4T-services@cedefop.europa.eu) at least two working days prior to the opening session.
7. Contacts between the contracting authority (Cedefop) and tenderers are prohibited throughout the procedure save in exceptional circumstances and under the following conditions only:

7.1 Contacts before the final date for submission of tenders:

- At the request of the tenderer, the Cedefop Procurement Service may provide additional information solely for the purpose of clarifying the tender documents. Any request for additional information must be made in writing by fax (fax No +30 2310 490 028) or by e-mail (C4T-services@cedefop.europa.eu).
Requests for additional information/clarification (if any) from potential tenders should preferably be written in English and should be received by the date and time as specified in the timetable in point 8 below. No such requests will be processed after that date.
- Cedefop may, on its own initiative, inform interested parties of any error, inaccuracy, omission or any other clerical error in the text of the call for tenders.
The Answers/Clarifications of Cedefop to the requests for additional information/clarification of the tenderers, **including that referred to above, will be published on Cedefop's website** under the same link where this Open Tender Procedure is announced (<http://www.cedefop.europa.eu/EN/working-with-us/public-procurements/calls-for-tenders.aspx>). **Tenderers must ensure that they visit regularly the site for updates up to the closing date for receipt of tenders.**

7.2 Contacts after the final date for submission of tenders and before opening:

- Tenderers should not contact the contracting authority (i.e. Cedefop) on their own initiative after the final date for submission of tenders.
- Tenderers are not allowed to amend their offers, e.g. by completing the documents they sent, replacing them with amended ones or sending new documents initially not included in the tender, as this may lead to rejection of the tender at a later stage. Any such need for additional information/document identified by the Evaluation Committee during the evaluation process will be notified to the tenderer concerned at Cedefop's initiative, providing for a reasonable deadline for response (see also the provisions under the heading below).

7.3 Contacts after the opening of tenders:

- Tenderers should not contact Cedefop on their own initiative at that stage.
- If clarification on the compliance with the Eligibility and/or Selection Criteria is required or if obvious clerical errors in the tender need to be corrected, Cedefop may contact tenderer/s in writing to obtain further clarification or documents on specific points of the tender or to correct obvious clerical errors.
- If the necessary information and/or supporting documents for the assessment of an award criterion are missing, these may not be requested as clarification if this might alter the proposal. Any requests for clarification in that regard should not lead to amendment of the terms of the tender. Tenderers must not modify their tender or add any new elements to it. The reply must therefore make clear reference to the relevant information already present in the file. This will serve solely the purpose to provide the Evaluation Committee with a clarification regarding the technical proposal, provided the terms of the tender are not modified as a result.
- In regards to possible clarifications on obvious clerical errors in the Financial Offer, tenderers must not add any new prices, but only explain the quotation on the basis of elements and prices already present in the offer. In case a tenderer alters his financial offer during a clarification (beyond the correction of any obvious clerical/calculation errors), this offer will be automatically rejected.
- Tenderers should be prepared to reply to such requests for clarification within a short reasonable deadline as it will be stated in the request for clarification.

8. Timetable:

	DATE	TIME
Deadline for request for any clarifications from the Contracting Authority (Cedefop)	25/07/2013	< N/A >
Last date on which clarifications are issued by Cedefop	< as soon as possible >	< N/A >
Deadline for submission of tenders (hand delivered)	05/08/2013	<17h00>
Deadline for submission of tenders by post / courier	05/08/2013	< N/A >
Validity of the tenders	05/02/2014	< N/A >
Tender opening session	19/08/2013	11h00

9. Tenderers must maintain the validity of their tender for at least 6 months following the deadline of submission of tenders. In exceptional cases, before the period of validity expires, Cedefop may ask the tenderers to extend the period for a specific number of days, which may not exceed 40.
- The selected tenderer must maintain his tender for a further period of 60 days from the date of notification that his tender has been recommended for the award of the contract. The further period of 60 days is added to the initial period of 6 months irrespective of the date of notification.
10. All costs incurred in preparing and submitting tenders should be borne by the tenderers.

11. Up to the point of signature, the contracting authority may either abandon the procurement or cancel the award procedure, without the candidates or tenderers being entitled to claim any compensation. If such decision is taken, the tenderers will be notified accordingly.
12. This invitation to tender is in no way binding on Cedefop. Cedefop's contractual obligation commences only upon the signature of the Contract with the successful tenderer.
13. Evaluating your tender and your possible subsequent replies to questions in accordance with the specifications of the invitation to tender, will involve the recording and processing of personal data (such as your name, address and CV). Unless indicated otherwise, such personal data will be processed by Cedefop's Finance and Procurement Service solely for that purpose and pursuant to Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of data by the Union institutions and bodies and on the free movement of such data. Details concerning the processing of your personal data are available on the privacy statement at:
http://ec.europa.eu/dataprotectionofficer/privacystatement_publicprocurement_en.pdf.
You have the right of recourse at any time to the European Data Protection Supervisor for matters relating to the processing of your personal data.
14. Your personal data (name, given name if natural person, address, legal form, registration number and name and given name of the persons with powers of representation, decision-making or control, if legal person) may be registered in the Early Warning System (EWS) only or both in the EWS and Central Exclusion Database (CED) by the Accounting Officer of the Commission, should you be in one of the situations mentioned in:
 - the Commission Decision 2008/969 of 16.12.2008 on the Early Warning System (for more information see the Privacy Statement on http://ec.europa.eu/budget/info_contract/legal_entities_en.htm), or
 - the Commission Regulation 2008/1302 of 17.12.2008 on the Central Exclusion Database (for more information see the Privacy Statement on http://ec.europa.eu/budget/library/sound_fin_mgt/privacy_statement_ced_en.pdf).
15. All tenderers will be informed in writing of the results of the tender procedure.

Yours sincerely,

signed G. Paraskevaidis
Head of Finance and Procurement

Attached: Tender Specifications

OPEN INVITATION TO TENDER

AO/RES/ASAIN/BMS/009/13

**‘Building Management System (BMS) -
Delivery, Installation and Supporting Services’**

Tender Specifications

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Introduction to Cedefop

Source: <http://www.cedefop.europa.eu/EN/about-cedefop.aspx>

To provide people with the skills they need, vocational education and training systems (VET) need to adapt quickly to changing demands. European VET policy's central aim is to promote excellence through VET. To make it both an attractive learning option for the brightest and best young people and adults and an effective way of helping those with low levels of qualification to develop their skills.

Cedefop, (the European Centre for the Development of Vocational Training) founded in 1975 and based in Greece since 1995, is a European Union (EU) agency. It provides the European Commission, Member States (1) and social partners with insights into trends concerning VET and offers advice on how European VET policy should meet the challenges Europe and its citizens face.

The evidence Cedefop provides comes from its:

- Monitoring of VET policy developments and reforms in Member States;
- Comparative research and analyses, including anticipation of future skill supply and demand;
- Forums for debates among policy-makers, social partners, researchers and practitioners on the best ways to tackle the challenges Europe faces.

Cedefop's objective and priorities for 2012-14

Cedefop's activities are guided by its strategic objective and [medium-term priorities for 2012-14](#). Cedefop's strategic objective is to contribute to designing and implementing policies for an attractive VET, that promotes excellence and social inclusion and to strengthening European cooperation in developing, implementing and analysing European VET policy. This objective is supported by three priorities:

- **Supporting modernisation of VET systems**

Modern VET systems must be relevant to individual and labour market needs. They should take into account learning acquired in different ways (for example through work experience) and at different times, and allow people to move between countries and sectors.

Member States decide national VET policies and Cedefop monitors and reports on the reforms and changes they make to their systems. Cedefop also works to improve international VET statistics.

European cooperation in VET, led by the European Commission working with Member States and social partners, has agreed shared objectives. As part of this cooperation, Cedefop has helped develop, and is now working to implement, common European tools and principles which aim to make it both easier to work and study abroad and move between different parts of a national education and training system (for example between general and vocational education).

(1) Cedefop also works with Iceland and Norway.

- **Careers and transitions – Continuing VET, adult and work-based learning**

Today, people are likely to change jobs more often. Cedefop is looking at how continuing training and work-based learning for adults can help people to manage their careers better and improve their job prospects. Cedefop is also examining how work-based learning for adults can help enterprises to deal with technological change, generate innovation and increase competitiveness.

New demands are also being made of VET teachers and trainers and Cedefop is looking at their changing roles and their skill and learning needs.

- **Analysing skills needs to inform VET provision**

Europe's growth and competitiveness will be held back if people's skills do not meet job requirements. Unemployment currently coexists with skill shortages. Understanding and anticipating the skills required helps ensuring that training meets labour market needs. It helps to promote a better match between individuals' potential and jobs' requirements.

Cedefop's skill needs analysis provides insights into the trends that influence skill supply and demand and the imbalances that may arise both in the EU and individual Member States. Cedefop is also finding out more about sectoral and occupational developments, such as the demand for 'green' skills for sustainable growth and, as the population ages, the potential for jobs creation and impact of skill needs of the 'silver' economy.

Cedefop's information

Cedefop shares its expertise through its publications, networks, conferences, seminars and web portal www.cedefop.europa.eu. The web portal provides news on Cedefop's major themes "Identifying skills needs", "Understanding qualifications", "Analysing policy" and "Developing lifelong learning". All Cedefop publications are available for download. Cedefop hosts and organises conferences and events throughout the year. Cedefop also coordinates the study visits programme for the European Commission. Study visits are short-term visits of three to five days for a small group of 10 to 15 specialists to examine a particular aspect of lifelong learning.

In addition to its web portal www.cedefop.europa.eu, Cedefop's work can be followed on Facebook at www.facebook.com/cedefop and Twitter at www.twitter.com/cedefop.

1. OVERVIEW OF THIS TENDER PROCEDURE

In submitting his tender, the tenderer accepts in full and without restriction the requirements of these Tender Specifications, and the Special and General conditions governing this contract as the sole basis of this tendering procedure, whatever his own conditions of sale and terms of business may be, which he hereby waives. No account can be taken of any reservation or disclaimer expressed in the tender as regards the tender dossier's Tender Conditions and Specifications and the Contract's Special and General Conditions. If necessary, clarification may be requested by the potential tenderer concerned while the tender submission phase is open – see point 7 of the Invitation to tender. Any reservation or disclaimer may result in the rejection of the tender without further evaluation on the grounds that it does not comply with the conditions of the Tender Dossier.

Tenderers are expected to examine carefully and comply with all instructions, forms, provisions and specifications contained in this tender dossier. Failure to submit Technical and Financial Proposals containing all the required information and documentation may lead to the rejection of the tender.

1.1. Description and type of the contract

a) Title of the contract:

'Building Management System (BMS) - Delivery, Installation and Supporting Services '

b) Short description of content of this contract:

Cedefop intends to revamp, upgrade and eventually replace partly or wholly components of its Building Management System (BMS). The upgrade will include new controlled points and energy management. In addition, Cedefop will require preventive and corrective maintenance including the relevant updates of the software and on demand technical assistance of all the installed equipment and software.

The delivery, installation, set up, configuration, putting into operation, fine-tuning/optimisation, commissioning, training and acceptance of the delivered Building Management System (BMS) will be implemented during the first year of the contract as presented in Annex 4-Time schedule. The contractor will provide Cedefop with a 12-month warranty of the whole system which will be in place for the 2nd year of the contract. Cedefop will buy warranty, maintenance and relevant updates of the software for the 3rd and 4th year of the contract.

c) Type of contract: Framework Supply Contract whereby the supplies will be provided following the signature of Order forms throughout its validity. The number and content of Order Forms will depend on the needs of Cedefop.

1.2. Place of delivery or performance

Cedefop's premises, 123 Europe str., Pylea, Thessaloniki, Greece

1.3. Division into lots

This tender procedure is not divided into lots.

1.4. Variants

Tenderers **may not** offer variant solutions to what is requested in the tender specifications. Cedefop will disregard any variants described in a tender, and further reserves the right to reject such tenders without further evaluation on the grounds that they do not comply with the tender specifications.

1.5. Value or quantity of purchase

The estimated budget for the required revamping, upgrading and eventually replacing partly or wholly components of its Building Management System (BMS), expanding to include new controlled points, energy management and maintenance services including the relevant updates of the software described in this call for tenders is of the order of **120,000 EUR** (without VAT).

1.6 Duration of the contract

The framework supply contract shall enter into force on the date of signature of the last contracting party (i.e. Cedefop), and shall have a duration of 1 year, and may be renewed up to three (3) times, each for an additional period of one (1) year, covering a total maximum period of four (4) years (1+1+1+1).

Cedefop intends to finalise the delivery, installation, set up, configuration, putting into operation, fine-tuning/optimisation, commissioning, training and acceptance of the delivered Building Management System (BMS) during the first year of the contract as presented in Annex 4 – Time Schedule.

1.7 Main terms of financing and payment

Payments will be made **within 30 days** of submission of invoices and at the conditions set out in the draft framework contract. The completed deliveries and associated services / tasks should be invoiced to Cedefop after prior acceptance by the Facilities Service of Cedefop.

Cedefop shall make payments to the contractor as follows:

- > For all order forms issued for Phase 1 and Phase 2 as described in Annex 4 and upon signature of each order form: pre-financing of 20% of the price of the order form and payment of the balance 80% upon completion of all tasks per order form;
- > **For all order forms issued for preventive and corrective maintenance** including relevant updates of the software – payment will be done every three months but only upon completion of the services (incl. spare parts, if any).

1.8 Commencement date & Period of execution

Please see Annex 4: Time schedule

Out-of-hours or weekend working will be required for carrying out the transition from the existing system to the new one that has to be installed under this contract, in order to minimize disruption to Cedefop staff.

2. TERMS OF REFERENCE

2.1. Project Description

2.1.1 Introduction

Cedefop intends to revamp, upgrade and eventually replace partly or wholly components of its Building Management System (BMS). This intended revamping stems principally from the ageing of the BMS software and the increase of Cedefop's needs in terms of energy measuring and saving.

The contractor shall provide everything required to complete the project, which shall include: supply, provision and installation of software, hardware, data network, equipment enclosures, cable containment, signal cabling and additions to existing mains power distribution, installation and maintenance services.

The contractor shall be responsible for the decommissioning and removal of any equipment that becomes redundant, including the removal of cables where agreed with Cedefop and the repair of surfaces with poor appearance as a result, in accordance with details given below.

The contractor shall provide a call-out service and scheduled preventative maintenance for the first twelve months after hand-over (min. warranty period) and for the following two years (3rd and 4th year) of the contract.

The contractor shall provide minimum twelve-month warranty on all parts, hardware, software and labour, as detailed below.

2.1.2 Project management

2.1.2.1 Responsible body

The Contractor shall report to the Facilities Manager of Cedefop and/or to a person duly authorised by the latter.

The contractor shall assign a specialist to act as a project manager to the project. A deputy shall also be appointed from the contractor's staff, introduced to the Cedefop project team and kept abreast of project details to maintain immediate continuity in case the principal project manager is absent.

2.1.3 Project Documentation

After practical completion and acceptance of the BMS system, all reports, briefings, designs, plans, accounts and documentation shall be delivered in English and shall become property of Cedefop.

Electronic Documents shall follow agreed standards as described below.

The documents and media should be sufficiently compatible with the following Microsoft Windows-Compatible formats:

Microsoft Office 8– Word, Excel, PowerPoint

Computer Aided Drawing – with file extensions .pdf, .dxf, .dwg (AutoCAD-LT 2010)

Adobe Acrobat - .pdf (readable by Acrobat Reader v8.0 and later)

Compressed files - .zip (e.g. by Winzip application)

Graphics files – with file extensions .jpg, .gif, .tif, .bmp

Portable media – CD-ROM, CD-R, DVD-ROM, DVD±R.

Project Documentation shall be provided in accordance with the electronic documentation formats listed above. These shall also be provided as three printed and bound copies (A4 size, with larger sizes folded, i.e. for drawings), and a master copy on CD-ROM. The documentation shall include:

1. Manufacturers' maintenance and operator instructions for all items of control equipment and panel mounted equipment supplied under this contract. This shall include guidance on assembly, dismantling, safety, special tools, maintenance equipment and similar operator instructions of all the BMS and field mounted equipment.
2. Device/component schedules detailing instrument tag reference, manufacturer's reference, set point, range, application, and other relevant information.
3. Plant schematic diagrams indicating all main plant items and control devices.
4. As manufactured/commissioned control panel wiring diagrams for all main panels and remote control panels.
5. As manufactured control panel general drawings including internal back plate layout, external fascia equipment and material schedule.
6. Full description of controls operation.
7. Control valve schedules.
8. Software strategy drawings.
9. Points schedule detailing input/output type, its function and reference.
10. Schematic indicating data loop cable, site network, Client Server (BMS) computer, remote workstations and DDC outstations.
11. Control panel test certificates.
12. A fully comprehensive and complete set of all software permanent records developed by the Contractor for each control outstation shall be provided on individual disks within the Operation and Maintenance manuals for retention by the operating personnel. Allowance shall be made to up-date these disks as may be necessary during the warranty period, with a record of original set points retained.
13. Tabulated data of all set points programmed into the software for easy reference of temperature, humidity, pressure and similar analogue set points.
14. All software system documentation, including all programming manuals and user manuals, detailing how the user can modify the software themselves. All the above information which shall be included by the Automatic Controls Specialist within the manual shall be provided one month prior to starting the final acceptance test.

2.1.4 Training

24 hours of training shall be provided by the contractor. This shall include a large proportion of hands-on learning under the guidance of the tutor. It shall be conducted at Cedefop premises prior to the start of operational use of the system.

2.1.4.1 Training for facilities staff and external maintenance staff

The contractor shall present a full system's training to Facilities staff and external maintenance staff (up to four persons) appropriate to their restricted duties (operation, administration and 1st level maintenance of the system). Instructions shall include 1st level maintenance procedures to allow Cedefop and contractor to benefit from a reduced number of engineer call-out occurrences during the warranty year, by enabling Cedefop Facilities staff and external maintenance staff to evaluate various likely situations, perform preventative actions and rectify elementary faults on the spot. In addition, after undergoing the training, the Facilities staff and external maintenance staff should have gained knowledge of the software characteristics and usage of the BMS system, the data structure, the back-up and recovery procedures, the mechanisms for data exporting.

The training shall be conducted at Cedefop premises after the operational migration from the existing equipment to the newly installed system.

2.1.4.2 Training for security staff

Full system's training shall be provided for security staff (up to four persons) in the operation of the system. It shall include practical hands-on training under the guidance of the tutor. It shall be conducted at Cedefop premises after the operational migration from the existing equipment to the newly installed system.

2.1.5 Warranty, Support, Preventive maintenance, and call-out service

2.1.5.1 Warranty

The contractor shall provide a minimum warranty of one year on all elements of the system and workmanship. Where individual manufacturers provide the contractor with a warranty longer than one year this benefit shall be passed on to Cedefop.

While the system may be installed and tested in stages, the warranty period shall start when the whole system is installed, commissioned and accepted by Cedefop as fully operational.

Prior periods of 'beneficial use' shall be discounted and considered as testing or burn-in.

For the warranty period, the Contractor shall allow for checking the operation of the BMS on two separate technical visits at six (6) monthly intervals, and in cooperation with Cedefop's representatives, shall make any necessary adjustments required to maintain optimum conditions. The last visit shall be two weeks prior to the end of warranty period.

For the warranty period, any defects of whatsoever nature shall be repaired/corrected free of any charge to Cedefop (to be covered by the warranty). Rectification of non-intermittent equipment faults, including cable terminations, shall be completed within a maximum of 24 hours from initial call by Cedefop to the contractor.

The contractor shall provide Cedefop Facilities and external maintenance staff with telephone access during Cedefop office hours to technical support personnel who are fully informed regarding the particulars of the Cedefop system. Out-of-hours telephone support shall be made available to Cedefop Facilities and external maintenance staff and to Security guards from a competent system service engineer where the daytime type support is not provided at all hours. This service shall be in place for at least 12 months after Practical Completion.

2.1.5.2 Preventive maintenance

Tenderers shall submit a proposal for an appropriate preventive maintenance schedule/scheme.

This proposal shall cover all the following requirements as a minimum:

1. Software Upgrades.
2. Data Back-up & Archiving.
3. Checking of all sensors, actuators & components.
4. Replacing of sensors, modules/cards and various components according to needs.
5. Emergency call out with response time of 24 hours.
6. Updating documentation.

Tenderers shall also indicate the location of their technicians who will be charged with responsibility for the systems described in this document.

After the warranty period (min. 1 year) and for the following two years, the **preventive maintenance** visits shall be made at least once per 6 months.

At least **two members** of the contractor's service and maintenance engineering team shall become familiar with all aspects of the system through conducting the aforementioned visits with a frequency of not less than once per half year for any individual. This is in an effort to ensure that up-to-date system experience is not carried solely by any one engineer who might leave the contractor and create a knowledge gap.

Thereafter and for the remainder of the contract any **defects** shall be repaired/ corrected in accordance with the maintenance scheme/ proposal of the contractor and Cedefop.

2.1.5.3 Remote support help desk service

A Remote Help Desk Service shall be included in the Tenderer's Technical proposal. The Remote Help Desk service shall provide technical help and training through PSTN active communications network between the site central BMS computer and the Help Desk. Operators shall be able to communicate by text messages and instructions from remote PC to site PC and hence operating or fault finding procedures can be demonstrated to the Operator from the Help Desk.

A Remote Help Desk Service shall be available all year round, 24 hours / 7days weekly, to assist as detailed above. **Emergency call-out response time for on-site interventions** shall be a maximum of 24 (twenty-four) hours, noting time.

2.1.6 Glossary

ABBREVIATIONS LIST & GENERAL TERMS

ABBREVIATIONS	
ACK	Acknowledgement
ADM	Administration
AI	Analog Input
AHU	Air Handling Unit
AO	Analog Output
APOGEE	Current Cedefop Building Automation System that manages all facility systems
BACnet	BACnet communication protocol developed for the requirements of buildings
BIM	Bus Interface Module
BLN	Building Level Network
BMS	Building Management System
C-Bus	Communication Bus
Client Server	Dedicated server communicating over an Ethernet backbone to allow access by multiple client workstations to the BMS
CO	Carbon Monoxide
CO2	Carbon Dioxide
DDC	Direct Digital Control
DHW	Domestic Hot Water
DI	Digital Input
DP	Differential Pressure
DO	Digital Output
EA	Exhaust Air
FS	Flow Switch
FLN	Floor Level Network
HMI	Human Machine Interface
HOA	Manually operated control switches Hand – Off – Auto
HVAC	Heating, Ventilation and Air Conditioning
HWP	Hot Water Pump
IAQ	Indoor Air Quality
I/O	Inputs / Outputs
LAN	Local Area Network
LON	Local Operating Network
LonWorks	LonWorks-based communication protocol deploys complete networks made up of interoperable products
M-Bus	Meter bus for remote readout of energy meters
MBC	Modular Building Controller
MEC	Modular Equipment Controller
MLN	Management Level Network
Modbus	Modbus protocol is used to establish master-slave / client-server communication between intelligent devices.
NC	Normally Closed
NO	Normally Opened
OA	Outdoor Air

ABBREVIATIONS	
OAT	Outdoor Air Temperature
PC	Personal Computer
Protocol	Set of rules defining the format, contents, meaning and order of the messages transmitted between the various instances of the same layer
RA	Return Air Temperature
RCC	Remote Control Cabinet
RH	Relative Humidity
RW	Return Water
SA	Supply Air
SMTP	Simple Network Management Protocol
SW	Supply Water
TCP/IP	Transmission Control Protocol/Internet Protocol
XML	Extensible Markup Language increasingly used to exchange information between two equipment items in BMS
Workstation	PC Operator Terminal

2.2. Current State

2.2.1. OVERVIEW OF THE CURRENT INFRASTRUCTURE

SYSTEM CONFIGURATIONS

Cedefop's BMS is the APOGEE Building Automation System, a system developed by Siemens (former Landis & Gyr) for America and Asian / Pacific countries. It is an open and expandable system that makes all information received from the connected facilities accessible to the user. Cedefop's BMS consists of the hardware configuration and communication systems needed to access data throughout a variety of systems inside the building:

Networking:

- Management Level Network (MLN): Cedefop's MLN consists of one (1) PC Work Station at the Management Level.
- Building Level Network processors (BLN) are connected and communicate by means of the Protocol 2 (P2) peer-to-peer network.
- Floor Level Network (FLN): consists of a number of room controllers and standalone systems.

Cedefop BMS uses the following transmission trunks:

A High Speed Trunk Interface (HSTI) which connects the Personal Computer (PC) of the Insight Workstation with the Building Level Network (BLN). The HSTI is power supplied by a 230Vac plug-in transformer included with the device. The HSTI is enclosed in a metal modem-like enclosure next to the Personal Computer.

Twisted copper pairs Communication Bus (C-Bus) among the High Speed Trunk Interface, the whole Building Level Network (BLN) and the Floor Level Network (FLN). Cedefop's BMS levels provide some degree of stand-alone capability and collect and pre-process data for other processing levels.

Hardware Configuration:

Microprocessor-based controllers lead a hierarchical configuration of the BMS.

- Management-level processor,
- Operations-Level Processor (PC type computer Work Station),
- System Level Controllers / Modular Building Controllers (MBC),
- Zone Level Controllers

FLOOR LEVEL NETWORK (FLN) - Zone-Level Controller Functions (please see Annex 2)

At Cedefop this is applicable for the Fan Coil Units. At the zone level, sensors and actuators interface directly with the controlled equipment. A communications bus (C-Bus) provides networking of zone-level controllers.

Control equipment: SIEMENS Stand Alone HVAC Room Temperature Controller RCC30

BUILDING LEVEL NETWORK (BLN) - Modular Building Controller Functions (please see Annex 1)

Cedefop's Building Level Network consists of eight (8) Modular Building Controllers (MBCs). Modular Building Controllers are applied to built-up air handlers, boilers plant room and central chiller plant. These controllers can also perform Electrical Power supply control functions, Fire Fighting and other systems monitoring.

Today at Cedefop there are no other network devices installed and data sharing with any other system.

Local operation of the control stations is not possible. Every operation of the station is limited to the use of a Personal Computer Work Station equipped with APOGEE Insight® software.

Also there is no remote operation; the system is not extended to include Web operation. In the event of faults or alarms outside of the User's normal working hours, no alarm/fault messages can be transmitted via Web, SMS or e-mail to safeguard prompt reaction to critical incidents.

The existing APOGEE Modular Building Controller (MBC) Open Processor/ Protocol 2 is attached to the mounting rails, Module Bus or Process Bus (P-Bus) rails and Communications Bus (C-Bus). The Open Processor contains the main processor, memory, and communications for the Modular Building Controller (MBC) or the Remote Building Controller (not installed at Cedefop).

The MBC consists of the following 4 major components:

Enclosure Assembly – to house internal components.

Power Module – supplies 24 Vdc and 24 Vac to Point Termination Modules.

Power Open Processor - contains the main processor and communications and is available with numerous communication options.

Point Termination Modules – consist of an electronic point module that performs A/D or D/A conversion, signal processing, point command output and communication with the Open Processor and a termination block for termination of field wiring or tubing.

Control equipment: Open Processor (Landis & Gyr) P/N 545-716 Protocol 2

MANAGEMENT LEVEL NETWORK (MLN) - Operations-Level Controller Functions (please see Annex 3)

In Cedefop's configuration, Management-level processor and Operations-level processor are common.

The processor at this level is a stand-alone PC with hard disk, keyboard, mouse, monitor and plug-in function boards to accommodate a printer and communications links. There is only one diskette drive as the only means of transferring data stored in floppy disks.

SITE LEVEL DESCRIPTION

A comprehensive site level description of Cedefop's BMS is depicted in Table 1:

Table 1:ELECTRO - MECHANICAL SYSTEMS						
Assets	Equipment	BMS FUNCTIONS				
		Link	Control	Graphics	Time schedule	Reports
Ventilation and Air-Conditioning (HVAC) System	Outside Air Temperature	Yes	N/A	Yes	N/A	No
	Indoor Temperature	Yes	N/A	Yes	N/A	No
	Air Handling Units (1)	Yes	Auto – Off – Man	Yes	Yes	No
	Pre-conditioned Air Handling Units (2)	Yes	Auto – Off – Man	Yes	Yes	No
	Fan Coil Units (3)	Yes	Auto – Off – Man	Yes	Yes	No
	Fans (4)	Yes	Auto – Off – Man	Yes	Yes	No
	Fuel Tanks	Yes	High – Low	Yes	N/A	No
	Boiler Room controls & instrumentation	Yes	On – Off	Yes	Yes	No
	Heating Boilers & Burners (5)	Yes	Auto – Off – Man	Yes	Yes	No
	Primary Pumps for Heating	Yes	Auto – Off – Man	Yes	Yes	No
	Heating Network	No	No	No	No	No
	Chillers controls & instrumentation	Yes	On – Off	Yes	Yes	No
	Chillers (6)	Yes	Auto – Off – Man	Yes	Yes	No
	Primary Pumps for Cooling	Yes	Auto – Off – Man	Yes	Yes	No
	Cooling Network	No	No	No	No	No
	Circulators & Pumps	Yes	Auto – Off – Man	Yes	Yes	No
	Energy Meters (7)	No	No	No	No	No

Potable Water System	Potable Water (8) Consumption Meters	No	No	No	No	No
	Potable Water Tank Level	Yes	High – Low	Yes	N/A	No
	Potable Water Flow Switch	Yes	Status	Yes	N/A	No
	Potable Water Pump Set	Yes	Auto – Off – Man	Yes	Yes	No
	Potable Water Network Pressure	No	No	No	No	No
	Water Treatment System	Yes	No	No	No	No
Sewage System	Sewage Water Pump Set	Yes	Status	Yes	N/A	No
	Pit Level	Yes	High – Low	Yes	N/A	No
Safety & Security Systems	Intrusion Alarm System	Yes	No	No	N/A	No
	Fire Detection	Yes	No	No	N/A	No
Fire Protection Systems	Fire Fighting pumps	Yes	Status	Yes	N/A	No
	Water Tank Level	No	No	No	N/A	No
	Fire Fighting test	No	No	No	No	No
	Water Meter Consumption	No	No	No	No	No
	Fire Suppression	No	No	No	No	No
Medium Voltage	Electrical Power Supply	Yes	Status	Yes	N/A	No
	Energy Meter (7)	No	No	No	N/A	No
Low Voltage	Electrical Power Supply	Yes	Status	Yes	N/A	No
	Energy Meter	Yes	Analog	Yes	N/A	Yes
Emergency Generator	Electrical Power Supply	Yes	Status	Yes	N/A	No
	Energy Meter	No	No	No	N/A	No
UPS	Electrical Power Supply	No	No	No	N/A	No

	Energy Meters (7)	No	No	No	No	No
	Ambient Temperature	No	No	No	No	No
Close Control Units (Data Rooms)	Electrical Power Supply	No	No	No	No	No
	Temperature & Humidity	No	No	No	No	No
Elevators	Electrical Power Supply	Yes	Status	Yes	No	No
	Physical Conditions (9)	No	No	No	No	No
Indoor/ Outdoor Lighting	Electrical Power Supply	No	No	No	No	No
	Energy Meters (7)	No	No	No	No	No
Public Address	Electrical Power Supply	No	No	No	No	No
	Emergency Activation	No	No	No	No	No
Solar Shading	Electrical Power Supply	No	No	No	No	No
	Process Control	No	No	No	No	No
Archive Rooms	Physical Conditions (9)	No	No	No	No	No
	Indoor Temperature	No	No	No	No	No
Publication Room	Physical Conditions (9)	No	No	No	No	No
	Indoor Temperature	No	No	No	No	No
Fountain	Water Pump Set	Yes	Status	Yes	N/A	No
	Water Recycling Pump Set	Yes	Status	Yes	N/A	No
Irrigation System	Water Meter Consumption (8)	No	No	No	No	No
	Process Control	No	No	No	No	No
	Physical Conditions (9)	No	No	No	No	No
Kitchen Equipment	Domestic Hot Water Boiler (Kitchen)	Yes	Auto – Off – Man	Yes	No	No
	Cold Rooms	No	No	No	No	No
	Physical Conditions (9)	No	No	No	No	No

Glossary table 1:FLN (Field Level Network):

NO: No Specified Connection / Requirements

YES: Connection to the BMS through digital or analog input Field Device, or any other user interface for operating, monitoring, and analysing all connected systems and plants.

N/A: Not Applicable, No Connection Requirements

Controls:

Status: digital input contact (0/1), digital output contact (0/1)

Auto – Off – Manual: Automatic operation through BMS, Manually OFF, Manually ON

Analog Input: Control signal 0 – 10 VDC, Ni 1000 resistance measurement

Analog Output: Control signal 0 – 10 VDC

High – Low: digital input contact (0/1)

Graphics: User-friendly operation via fully graphical user interfaces and animations

Yes – No

Time-schedules: User-friendly operation via time control of procedures and processes

Yes – No

Reports: Optimized overview through analysis and reports

Yes – No

2.2.2. Equipment datasheets and drawings**Floor Level Network (FLN-Field Devices)**

All existing Floor Level Network field devices are presented with their respective documentation and drawings in Annexes 2, 3 and 6. In particular, these Annexes include:

Documentation

The equipment datasheets, manuals and drawings:

- ↗ HVAC FIELD DEVICES.DWG”
- ↗ POINT MODULES & FIELD DEVICES. (Worksheet Cabinets).XLS”
- ↗ Room Temperature Controller RCC30.PDF”
- ↗ Air Damper Actuators GBB16...1”
- ↗ Room Temperature Sensors QAA24/AP, QAA25/AP”
- ↗ Outdoor Sensors QAC22”
- ↗ Immersion Temperature Sensors QAE22”
- ↗ Duct Temperature Sensors QAM22”
- ↗ Differential Pressure Sensors QBE61.3-DP”
- ↗ Differential Pressure Detector QBM81”
- ↗ Duct Sensors for Humidity and Temperature QFM65”
- ↗ CO2 Sensors QPA63”
- ↗ Electro-hydraulic Actuators for Valves SKC32...”
- ↗ Electro-motoric Actuators for Valves SQS35...”
- ↗ Electro-motoric Actuators for Valves SQX32...”

- ↪ Electrical Actuators for Valves SSC31...”
- ↪ Butterfly Valves VKF41...”C”
- ↪ 2-Port Seat Valves with Flange, PN 16 VVF40...”
- ↪ 3-Port Seat Valves with Flange, PN 16 VXF40...”
- ↪ 3-Port Seat Valves with Male Thread, PN 16 VXG44...”
- ↪ 2-Port and 3-Port Valves, PN 16 VVP45...”

Modular Building Controllers (Field Panels)

All existing Modular Building Controllers are presented with their respective drawings and documentation in Annex 1. In particular, this Annex includes:

Documentation

The equipment datasheets, manuals and drawings:

- ↪ MODULAR BUILDING CONTROLLER 1.PDF
- ↪ MODULAR BUILDING CONTROLLER 2.PDF
- ↪ MODULAR BUILDING CONTROLLER 3.PDF
- ↪ MODULAR BUILDING CONTROLLER 5.PDF
- ↪ MODULAR BUILDING CONTROLLER 6.PDF
- ↪ MODULAR BUILDING CONTROLLER 7.PDF
- ↪ MODULAR BUILDING CONTROLLER 8.PDF
- ↪ BMS TOPOLOGY
- ↪ SIEMENS MODULAR BUILDING CONTROLLER.PDF
- ↪ I/O MODULES RANGE
- ↪ PTM6.EMK.PDF
- ↪ HSTI.PDF

2.2.3. NETWORK DRAWINGS & DIAGRAMS

ALL network drawings and diagrams of the existing Building Management System (BMS) are attached in Annex 3. In particular, this Annex includes:

- ↪ ELECTRO MECHANICAL_BMS DRAWINGS__BASEMENT.PDF
- ↪ ELECTRO MECHANICAL_BMS DRAWINGS__A GROUND FLOOR.PDF
- ↪ ELECTRO MECHANICAL_BMS DRAWINGS__B GROUND FLOOR.PDF
- ↪ ELECTRO MECHANICAL_BMS DRAWINGS__A FLOOR.PDF
- ↪ ELECTRO MECHANICAL_BMS DRAWINGS__B FLOOR.PDF

2.2.4. POINT MODULES & FIELD DEVICES LIST

2.2.4.1. GENERAL DESCRIPTION

Cedefop's BMS is centrally monitored at the ground floor of the Cedefop building. The technical data of the main, peripheral control and monitoring instruments and devices which are installed within the existing Building Management System (BMS) are the following:

Sensors

✓ Air duct temperature sensor

The sensor includes all components required for its installation within an air duct.

The electronic elements and terminals are located in a box with a protection class of IP 43.

The sensor body is a thermal resistor. Its range is: -50 to 150 °C, while the sensor's allowed deviation is $\pm 1\%$.

Type: SIEMENS QAM22

✓ Immersion temperature sensor

The sensor includes the appropriate case for immersion into a pipe.

The electronic elements and terminals are located in a box with a protection class of IP 43.

The sensor body is a thermal resistor. Its range is: -10 to 125 °C, while the sensor's allowed deviation is $\pm 1\%$.

Type: SIEMENS QAE22A

✓ Differential air pressure switch

It is suitable for installation in a network of low-pressure air ducts and for cooperation with a central control system. It is suitable for the supervision of filters, fans, air flow, overpressure in special areas etc.

It can be adjusted at least for the following ranges:

20 to 300 Pa, 50 to 500 Pa, 100 to 1000 Pa

The sensor is accompanied by all components required for its installation within the air duct.

Type: SIEMENS QBM81.3/5

✓ Liquid pressure sensor

Analogue pressure sensors, suitable for placement within a pipe, are used to measure the pressure of liquids.

They require a power supply of 24VAC and provide an output of 0 to 10VDC for connection to the central control system.

Their measuring range is:

0 to 100kPa, or 0 to 500kPa, or 0 to 1Mpa up to 0 to 4Mpa

Their accuracy is in the order of 0.5% of the range.

Type: SIEMENS QBE61.1-P... (0,5.... 10 etc.)

✓ Air duct quality sensor

The sensor includes the required components for its installation within an air duct.

The electronic elements and terminals are located in a box with a protection class of IP 43.

The sensor's power supply is 24Vac and its output is 0-10Vdc, depending on the purity of the measured air.

Type: SIEMENS QPA63.1/ARG.

✓ Air duct temperature - humidity sensor

The sensor includes the required components for its installation within an air duct.

The electronic elements and terminals are located in a box with a protection class of IP 42.

The sensor's power supply is 24Vac and its output is 0-10Vdc, depending on the level of the measured air temperature and humidity.

Type: SIEMENS QFM65.

✓ **Room temperature sensor**

The sensor includes the required components for wall mounting. The electronic elements and terminals are located in a box with a protection class of IP 30. The sensor has a resistance output, depending on the level of the measured air temperature. Its range is: 0 to 50 °C.

Type: SIEMENS QAA24.

✓ **Ambient temperature sensor**

The sensor includes the required components for wall mounting. The electronic elements and terminals are located in a box with a protection class of IP 54. The sensor has a resistance output, depending on the level of the measured air temperature. Its range is: -50 to 70 °C.

Type: SIEMENS QAC22.

Liquid flow switch

Supervision of the operation of the circulators and pumps of the aforementioned installation is performed using flow switches which are suitable for placement within a pipe (1" connection) and have a tongue with the required sensitivity for flow detection. The tongue is made of a material suitable for this particular use.

They can be connected to the central control system through an SPDT switch.

Type: SIEMENS DBSF-1K

Damper actuators

Damper actuators are analogue devices with an operating voltage of 24Vac and a control signal of 0 to 10VDC, suitable for areas up to 4 sq.m., with a protection class of IP54.

Type: SIEMENS GBB161.1E.

Control valves

Valves are of a seat valve type. The valve body is made of gun metal or cast iron, while their interior is made of chrome, nickel and steel. Valves of a diameter up to 1 ½ inches have a screw-type connection, while valves of a 2-inch or greater diameter have a flange-type connection.

Valve actuators are analogue devices with an operating voltage of 24Vac and a control signal of 0...10VDC.

Type: SIEMENS VXG44.../SQS65 or VXP45.../SSC61 or VXF40/VVF40.../SQX6.../SKC...

Butterfly valves

The valves have a flange-type connection. The valve body is made of cast iron, while their interior is made of stainless steel. They have a 90° rotation angle and their operating temperature is -15 to 120°C. The valve actuators are on/off type with an operating voltage of 24Vac.

Type: SIEMENS VKF41.../SQL...

Types of I/O Modules

The typical connection diagram used at Cedefop's Automation stations is shown below, in Picture 1. The APOGEE Modular Building Controller (MBC) is connected to the mounting rails of the I/O Modules via the Process Bus (P-Bus). A variety of compatible Field Devices are connected with the module's inputs and outputs. Table 2 describes the basic types of I/Os modules used at Cedefop:

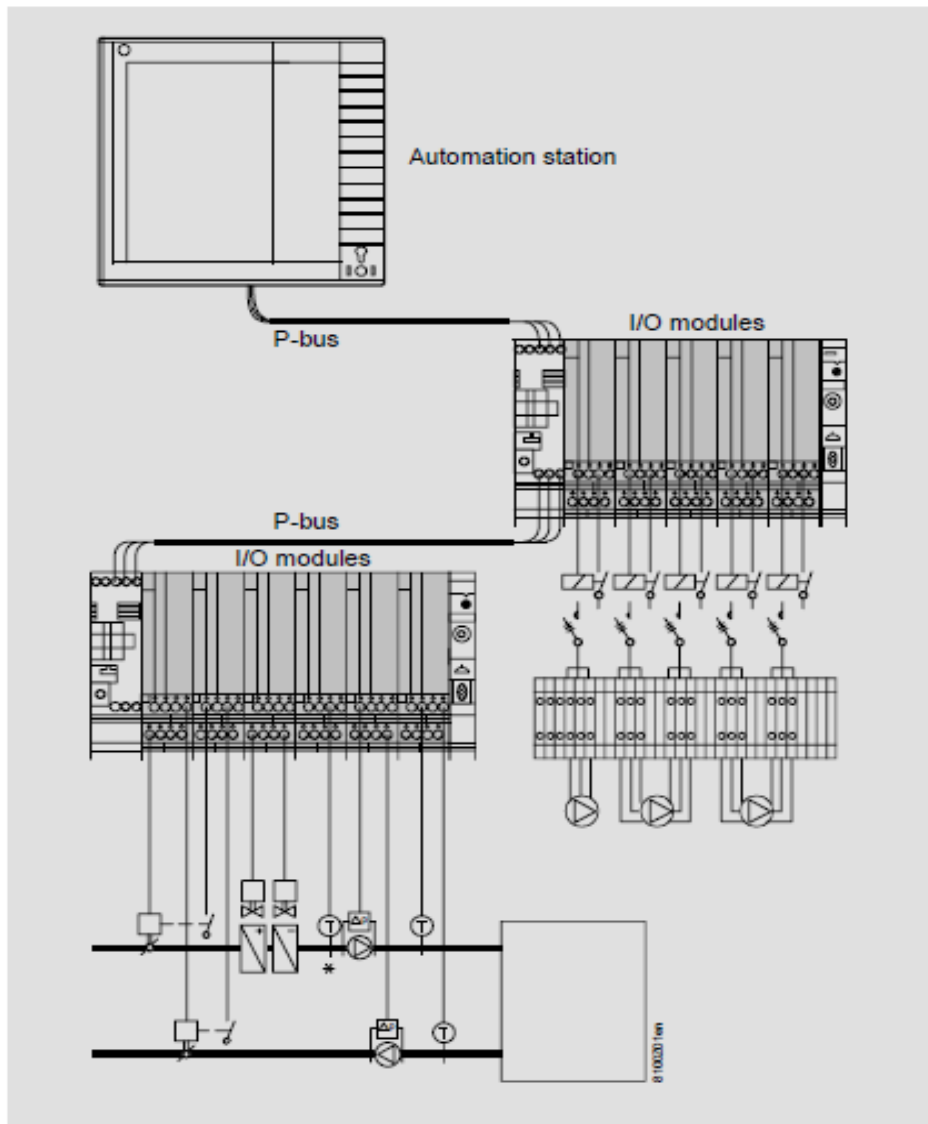
Picture 1

Table 2: Modules / inputs / outputs**TOTAL CONTROL POINTS**

POINTS	RCC 1	RCC 2	RCC 3/4	RCC 5	RCC 6	RCC 7	RCC 8	TOTAL/ TYPE
DI	37	36	115	46	30	45	16	325
DO	11	10	40	9	10	11	1	92
AI	22	13	10	15	6	4	7	77
AO	14	10	0	8	3	2	0	37
TOTAL	84	69	165	78	49	62	24	531

MODULES	RCC 1	RCC 2	RCC 3/4	RCC 5	RCC 6	RCC 7	RCC 8	TOTAL/ TYPE
PTM6.2Q50	6	6	20	6	5	6	0	49
PTM6.2R1K	4	6	6	5	1	2	0	24
PTM6.2U10	6	8	0	3	3	1	8	29
PTM6.2Y10S	6	4	0	4	2	1	0	17
PTM6.4D20	8	7	30	12	8	12	6	83
TOTAL	30	31	56	30	19	22	14	202

PTM6.2Q50: Digital switching output module, signal converters, connected to P-bus, with two independent on/off control outputs (binary control outputs) and potential-free changeover contacts;

PTM6.2R1K: Analog measuring input module connected to P-bus and for use with LG-Ni 1000 temperature sensors. It is a double module with two independent inputs;

PTM6.2U10: Analog measuring input module connected to P-bus, with two independent inputs for measuring voltages of DC 0...10 V (double module);

PTM6.2Y10S: Analog positioning output module, signal converters connected to P-bus, with independent outputs delivering continuous DC 0...10 V positioning signals and storage of positioning values if transmission is faulty;

PTM6.4D20: Digital input signalling module connected to P-bus of the automation station, with four separate status inputs for acquiring signals from potential-free contacts or electronic switching devices

RCC: Remote Control Cabinet

A detailed table of the modules / inputs / outputs of Cedefop's Building Management System (BMS) is attached in Annex 2:

"APPENDIX: POINT MODULES & FIELD DEVICES LIST.PDF"

2.3. Future State

2.3.1. Introduction

Cedefop requires the supply and commissioning of a complete and fully automated Building Management System (BMS) including Labour and Materials necessary to form a complete working installation. As detailed above, the contractor shall provide everything required to complete the project, which shall include: supply, provision and installation of software, hardware, data network, equipment enclosures, cable containment, signal cabling and additions to existing mains power distribution, installation and maintenance services.

The Contractor shall be responsible for the software programming, documentation, design engineering and other actions/services required to ensure that the entire system is placed into successful operation and all the works are completely acceptable to Cedefop's operating staff and engineers.

This shall include, but not be limited to, the following:

1. Manufacture and/or supply of equipment
2. Pre-delivery testing of BMS
3. Production of wiring diagram and panel arrangement drawings
4. Workshop control panel inspections
5. Software strategy drawings (hard copy and electronic format)
6. Software development and programming
7. Design and development engineering
8. Site supervision relating to the scope of works
9. Liaison with other parties/Contractors and trades on site
10. Active dynamic graphics (full programming and creation)
11. Installation of BMS workstation computer and peripherals
12. On-site testing of all equipment
13. On-site commissioning of all equipment
14. Inspection of commissioning and client demonstration
15. Service and Warranty
16. Training
17. Operation and Maintenance Manuals
18. Remote support Help Desk service

The BMS shall be of the distributed intelligence type, employing stand-alone controllers communicating directly with all other controllers on the local area network and site-wide area network.

Certification of Performance

The building automation products shall be marked with the eu.bac Certification Mark that assures the conformity of products and systems in the area Building Automation and Controls defined in European Directives and European Standards.

Hardware and Software shall be constructed and tested according to:

- EN ISO 16484-2 Building automation and control systems (BACS) - Part 2: Hardware (ISO 16484-2:2004)
- EN ISO 16484-3 Building automation and control systems (BACS) - Part 3: Functions (ISO 16484-3:2005)
- EN ISO 16484-5 Building automation and control systems (BACS) - Part 5: Data Communication Protocol (ISO 16484-5:2010)

The new system shall include the following equipment:

1. One (1) Workstation PC in Maintenance Manager's Office on the ground floor.
2. One (1) Workstation PC in Facility Manager's Office on the second floor.
3. One (1) Monitoring Panel in the Guard House.
4. Web operation for at least four (4) users.
5. Peripheral Equipment – Printers – Modems - Network Devices.
6. Fully Intelligent (DDC) Outstations (stand-alone).
7. Field Mounted and Plant Mounted Controls Sensing Devices.
8. HVAC Control Equipment.
9. Fire override & fire shutdown safety equipment.
10. Electrical Energy Metering Devices.
11. Water Consumption Metering Devices.
12. Heating, Cooling and Domestic Hot Water Energy Metering Devices.

Outstations shall be totally 'Stand Alone' and shall not rely on the central computer to perform any of the control functions detailed in these Specifications.

The operation of the control system shall continue to perform in its entirety should the central computer workstation be removed. Systems relying on the central computer workstation for any control operation or management of communications shall not be accepted.

Outstation units shall include an internal or external UPS power supply unit to ensure reliability of network communications through any power outage event. UPS shall be sized for 20% spare capacity. The UPS shall be complete with batteries, external bypass and line conditioning.

The BMS shall be arranged such that in the event of electrical power failure or other abnormal operating situations, inherent fail-safe features shall prevent potentially hazardous conditions arising.

Any additional information relating to electrical loads and mechanical duties of plant equipment shall be gathered by the Contractor, in cooperation with Cedefop.

INTEGRATION WITH OTHER BUILDING SERVICES CONTROL SYSTEMS

The Contractor shall provide a direct interface with all typical standard interface protocols.

The method of communication shall adopt standard "Open Concept" protocol(s) using proven technology and not requiring additional gateways or servers.

Typical Standard interface protocols are:

1. TCP/IP – Internet Protocol (Management Level)
2. BACnet – American (ASHRAE) Building Automation and Control Network
3. LonWorks® - Communication protocol developed by Echelon®
4. ArcNet – ANSI 878.1 LAN with data exchange of 2.5 Mbit/s.
5. Ethernet – ISO 8802-3 Data transmission of 10 Mbit/s.
6. RS232/RJ485 - Direct ASCII Communication
7. M-Bus – Meter bus for remote readout of energy meters
8. Modbus – Dynamic Data Exchange (DDE) Interface

SOFTWARE LICENCES

The Contractor shall provide all appropriate software licences, registration and documentation for all software and firmware provided.

The Contractor shall guarantee that the software installed is the latest version and will be regularly updated throughout the duration of the contract.

SOFTWARE STRATEGY DRAWINGS AND FUNCTIONAL DESCRIPTION

The Contractor shall submit controls schematics, points' schedules and software strategy drawings accompanied by a full functional description of operation prior to commencement of any software programming. Allowance shall be made to review the strategy drawings and functional operation of the systems with Cedefop to ensure all interlocks/alarms/inhibit functions/timers, and similar operations are included.

Central (BMS) Workstation Hardware

The central (BMS) processor shall be manufactured according to the following minimum hardware specifications.

1. Intel Core I3
2. Memory Chips
 - 4GB DDR3-1066
 - Anti Radion 1 GB DDR3 or similar type
3. Graphics Accelerator Card (minimum 128 Mbyte)
4. Hard Disk Drive HDD SATA 3, 500GB
5. DVD SATA
6. External connections
 - 2 fast serial ports
 - 1 parallel port
 - 1 graphics port
 - 1 keyboard port
 - 1 mouse port
 - 2 USB ports
7. Windows Latest operating system, such as Win 7 Professional 32 Bit
8. Power supply unit complete with electrical surge protective devices and all emissions filtering equipment.

Colour Graphic Monitors

Colour graphic TFT flat panel monitors shall be of digital format having a minimum measurement of 21 inch. The monitor shall be non-interlaced with low radiation emission, MPR-11 certified and carrying the CE mark.

Colour Graphic Printers

The colour graphic printer shall be of the inkjet or preferably laserjet type suitable for hard copies of all graphical information and reproduction of the dynamic graphic displays in full colour.

Emergency UPS Supply Supporting (BMS) Workstation

A stand-alone uninterruptible power supply (UPS) unit shall be provided to maintain the mains voltage to the central (BMS) workstation during a power failure. The (UPS) unit shall be continually on-line with a minimum nominal output power designed to allow the central (BMS) workstation and monitor to continue to operate for a minimum period of 30 minutes following a power outage. The (UPS) unit shall be equipped with voltage stabilisers, user replaceable batteries complete with totally automatic battery test feature.

APPLICATION SOFTWARE

The following requirements are mandatory:

- ✓ Continuous safe operation of building systems. It shall not be possible to remotely override hardwired safety interlocks.
- ✓ Safety controls fitted to plant such as boilers, chillers, calorifiers and similar equipment shall take priority at all times over instructions issued through the (BMS).
- ✓ The software functions specified shall be provided as an integral part of the outstation and shall not be dependent upon any higher level computer for execution.
- ✓ All software communications shall be in English or Greek language without reference to a special code.
- ✓ The software incorporated shall be readily available to be easily modified by the user, tailoring the system to suit their particular requirements. All adjustable variables incorporated in the software programs listed shall be suitable for being reset from the central Building Management System or locally from the outstation.
- ✓ The system software shall comprise the real time operating system, Communications Control, Graphical Operator Interface which includes editors and viewers with original licenses for editing and viewing.
- ✓ The Central Workstation software shall have a capacity of at least 1000 Data Points.
- ✓ All the programs detailed shall be executed automatically without the need for operator intervention, and shall allow full customisation defined by the user, to automatically adjust slope settings, perform calculations, special control routines and project specific processes. Customised processes shall be triggered based on the Energy Management applications detailed in these specifications.
- ✓ All outstations shall be suitable for programming locally at the plant-room and centrally from the BMS workstation.
- ✓ Cedefop technical service should be able to define and grant various access rights to users. Alarm signals separation into levels of importance. Software must have the ability to select who to inform via e-mail or SMS among a range of BMS users.
- ✓ Extraction of reports and energy evaluation scenarios.
- ✓ Interface with existing critical systems and services of the building like:
 - UPS units and UPS room;
 - Close control units;

- Archives room;
- Communications room;
- Fire fighting system;
- Fire detection system;
- Security system;
- Indoor and outdoor lighting of common areas;
- Solar shading system in cooperation with weather station;
- Two freezers in the kitchen.

The main software applications shall comprise:

- Plant Viewer: Graphics based operation of the plant
- Trend Viewer: Logging and display of measured value
- Alarm Viewer: Display of alarm messages
- Alarm Router: Automatic routing of alarms
- Event Summary Logging of alarms, system events and user Activities

COMMISSIONING TESTS

After the controls have been installed and connected, commissioning tests shall be carried out to ensure that all items are connected correctly, and functioning in the manner intended.

If necessary the commissioning tests may be carried out in stages due to repair works that are taking place in some areas of the building.

At this time the Contractor shall provide commissioning test sheets, completed in full, identifying all point checks, raise/lower commands, loop checks and other necessary details.

These sheets shall be submitted to Cedefop for information purposes prior to any inspection.

The Contractor shall foresee for the whole of the Building & Energy Management System (BMS) to be run for a minimum period of 7 days after completion, but prior to handover, in order to demonstrate "trouble-free" running under normal operating conditions.

These tests shall be confirmed by the production of suitable BMS Data logging graphs indicating continuous stable environmental conditions on selected analogue sensors.

In undertaking the above tests the Contractor shall be responsible for programming as required, ensuring that all software de-bugging is eliminated and specific control data is available.

Prior to final testing of the BMS the Contractor and in cooperation with Cedefop shall ensure that all building services systems are operating correctly and all mechanical & electrical plant has been commissioned and tested satisfactorily.

After the controls have been commissioned and successfully tested by the Contractor and the completed commissioning sheets have been submitted to Cedefop, the entire system shall be demonstrated in full to the Cedefop staff concerned.

SPARE COMPONENTS

Spare parts shall be provided under this contract. Any charges shall be in accordance with the catalogue prices submitted with the Technical proposal (please see point (3) below).

The selected contractor shall ensure availability of sufficient mission critical spare parts. When replacement items must be procured the repair period shall be no longer than five (5) calendar days from initial call by Cedefop to the contractor.

NETWORK TOPOLOGY DIAGRAMS

The network topology diagrams and drawings of the new Building Management System (BMS) are attached in Annex 5 and in Annex 6:

- FUTURE STATE TOPOLOGY_SCENARIO 2.PDF
- ELECTRO MECHANICAL_BMS DRAWINGS_FUTURE STATE_A FLOOR.PDF
- ELECTRO MECHANICAL_BMS DRAWINGS_FUTURE STATE_A GROUND FLOOR.PDF
- ELECTRO MECHANICAL_BMS DRAWINGS_FUTURE STATE_B FLOOR.PDF
- ELECTRO MECHANICAL_BMS DRAWINGS_FUTURE STATE_B GROUND FLOOR.PDF
- ELECTRO MECHANICAL_BMS DRAWINGS_FUTURE STATE_BASEMENT.PDF

2.3.2. ENERGY MANAGEMENT

Energy Management Software

The new BMS system shall include a Energy Management software in order to measure energy consumption and optimise energy expenditure. The required software should have the following characteristics:

- Analysis of the energy data / energy flows with specific load curve diagrams
- Visualization of the inter-dependencies
- Detection of savings potentials, assessed minimum and maximum values
- Energy measurements for accounting purposes
- Benchmarking
- Visualization of the power supply with switching states and energy flows
- Statistic reports
- Verifiable efficiency improvements
- Targeted troubleshooting via fast and detailed information on events and faults that occur in the power distribution within the building
- Logging of fault and event messages with a date and time stamp so that downtimes can be documented and fault processes can be traced and analysed later using the data recorded
- Compliance with purchasing contracts via the selective control of consuming devices
- Automatic notification of the service personnel

The following monitoring points will be installed:

Consumptions	Power meters	Heating / cooling energy meters	Water volume meters
Mains Power Supply	1		
Generator	1		
Electrical panel in boilers room	1		
UPS	1		
Electrical panel in security booth	1		
Electrical panel in kitchen	1		
Electrical panel in level 2	1		
Electrical panel in level 3	1		
Electrical panel in level 4	1		
Chillers	2	2	
Boilers		1	
Air Handling Units		12	
Pre Conditioned Air Units		12	
Fan Coil Units		6	
Radiators		1	
Domestic Hot Water		1	
Potable water			1
Fire protection			1
Irrigation			1

Power meters (11 pcs)

Eleven (11) power sources shall be monitored and analysed:

- ❖ Mains Power supply (1 unit for the main LV distribution panel)
- ❖ Generator (1 unit)
- ❖ UPS (1 unit for the main circuit breaker of both UPS)
- ❖ Chillers (2 units, one for each chiller)
- ❖ Electrical panel in Security booth (1 unit)
- ❖ Electrical panel in boilers room (1 unit)
- ❖ Electrical panel in Kitchen (1 unit)
- ❖ Electrical panel in level 2 (1 unit)
- ❖ Electrical panel in level 3 (1 unit)
- ❖ Electrical panel in level 4 (1 unit)

The minimum required characteristics of the power meters are:

- Standards: EN 61036
- Multifunctional design
- Accuracy: Class 2
- Safety: Class II
- Current measurement: Direct connection or via Transformer
- LCD for displaying measured quantities
- EEPROM for retaining configuration and readings in a power failure
- Operating Temperature: -10°C - 45°C
- Relative Humidity: < 75% annual average
- Protection: IP 41
- Electrical Isolation
- Interfaces: LON, M-bus, Modbus RS485

Energy meters (35 pcs):

In order to monitor the heating / cooling energy, the following installations must be equipped with metering devices:

- ❖ Boilers – 1 device for both boilers
- ❖ Chillers – 2 devices
- ❖ Air Handling Units – 12 devices (6 for the cold water network and 6 for the hot water network)
- ❖ Pre Conditioned Air – 12 devices (6 for the cold water network and 6 for the hot water network)
- ❖ Fan Coil Units – 6 units (3 for the cold water network and 3 for the hot water network)
- ❖ Domestic Hot Water – 1 unit (mainly for the kitchen supply with Hot Water)
- ❖ Radiators – 1 unit

The minimum required characteristics of the heating / cooling energy meters are:

- Standards: EN 1434
- Accuracy: Class 3
- Environmental: Class A
- Unit of Energy: kWh
- Max. permissible operating pressure: 10 bar
- Measurement range temp. sensor: -10°C ... 90°C
- Interface: M-bus / impulse
- LCD for displaying flow rate, temperature, heat and cooling output
- Operating Temperature: max. 55°C
- Battery life (if applicable): > 6 years
- Protection: IP 54

Water meters (3 pcs):

In order to monitor and measure the water consumption, the following installations must be equipped with water volume meters:

- ❖ Drinking water – 1 for the supply of drinking water coming from the Public Water Supply Company
- ❖ Fire protection – 1 for the feeding of the fire protection water tank
- ❖ Irrigation – 1 for the supply of water to the irrigation system from the Public Water Supply Company

The minimum required characteristics of the water meters are:

- Accuracy (metrological): Class B
- Interface: M-bus / impulse
- Temperature: 30°C for cold and 90°C for hot
- Protection: IP 54

3. SPECIFIC INFORMATION CONCERNING PARTICIPATION TO THIS TENDER PROCEDURE

3.1 Exclusion criteria

Participation to this tender procedure is only open to tenderers who are in a position to subscribe in full to the Declaration on Exclusion Criteria and absence of conflict of interest given in Annex C. Therefore all tenderers, all group (consortium) members (if any) and any subcontractor/s, (identified as per the two bullet-points in the fourth paragraph of point 4.2 below) **MUST** provide the self-declaration found in Annex C duly signed and dated. The exclusion criteria will be assessed in relation to each company individually.

Cedefop reserves the right to check the situations described in points c) and f) of the Declaration.

In the event of recommendation for contract award, point l) of Annex C will apply.

3.1. Selection criteria

The selection criteria concern the tenderer's capacity to execute similar contracts.

The tenderers must submit documentary evidence (or statements, where required) of their economic, financial, technical and professional capacity to perform this contract.

Each and all requirements for economic and financial capacity should be fulfilled by the tenderer - alone (in the case of single tenderers) or as a whole (in case the tenderer is a grouping/ consortium). Participation in tendering is open to all legal persons bidding either individually or in a grouping (consortium) of tenderers.

An economic operator may, where appropriate and for a particular contract, rely on the capacities of other entities, regardless of the legal nature of the links which he has with them. He must in that case prove to the contracting authority that he will have at his disposal the resources necessary for performance of the contract, for example by producing an undertaking on the part of those entities to place their resources at his disposal. This obligation may be fulfilled by presenting signed Statements from those entities or the consortium agreement.

3.2.1 Economic and Financial capacity

The tenderer must be in a stable financial position and have the economic and financial capacity to perform the contract.

Requirement:

The average annual turnover of the tenderer for the last **three (3)** financial years **concerning the type of services covered in this call for tenders** should be at least 250,000 €.

Proof of economic and financial capacity must be furnished by the following document:

Signed statement (please fill-in and sign your Statement in Questionnaire 2 of Annex G) of the tenderer's turnover concerning the type of services covered in this call for tenders during each of the last 3 (three) financial years.

In the case of a consortium (grouping) or subcontracting each member of the consortium and all sub-contractors (in line with points 4.1 or 4.2 below) must provide the required statement for the economic and financial capacity (Questionnaire 2 of Annex G), **but the assessment of whether the minimum requirement is met will bear on the consortium as a whole or the tenderer together with his subcontractors.**

In the event of recommendation for contract award the winning tenderer (single tenderer or in the case of a consortium (grouping) each member of the consortium) will be requested to prove the above by submitting Audited Financial Statements (Audited Profit and Loss Account/ Statement or equivalent) if these are foreseen by the respective national legislation. Should total subcontracting exceed 40% of the work by value, Cedefop reserves the right to request audited financial statements also from the subcontractors.

If, for some exceptional reason the tenderer is unable to provide one or other of the above documents, he is required to justify the non-provision and may prove his economic and financial capacity by any other document which Cedefop considers appropriate. Cedefop reserves the right to request any other document enabling it to verify the tenderer's economic and financial capacity.

3.2.2 Technical and professional capacity

The Tenderers are required to have sufficient technical and professional capacity to perform the contract.

Requirements for the tenderer

- Be enrolled in the relevant professional register;
- Have adequate structure and resources (trained and certified technical staff) to perform the services as described in the Technical Specifications;
- Have a minimum of three (3) years' experience in implementing contracts related to the subject of this call for tenders;
- Have in place and operate a, relevant to the subject of the contract, Quality Management System.

Requirements for the tenderer's team of specialists

The Tenderer's specialists (minimum 2), who will be proposed to supervise/implement the contract, must have the relevant profiles, knowledge and experience for the successful implementation of the contract, namely:

- University degree in one of the following fields (electrical/mechanical/IT engineering);
- Minimum 5 years' experience in BMS systems obtained after the university degree;
- Very good communication skills (spoken and written) in English (Linguistic ability to communicate and draft to a high standard in English (Level C1 as determined in "Language levels of the Common European Framework of Reference (CEF)").

Proofs / Evidences of Technical and professional capacity

The following documents or information must be presented by the tenderer to prove his technical and professional capacity to perform the proposed contract:

- Copy of an official Document for enrolment in the relevant professional register, as prescribed by the laws of the Member State, where the tenderer is established;
- Detailed company profile demonstrating the ability to implement projects/contracts similar to those described in this call for tenders;
- Copy of the relevant valid certification (ISO 9001:2000 or equivalent) of the quality management system;

- List of at least 3 contracts performed in the past three (3) years similar to the scope, size and nature as those required in this call for tenders, describing the subjects, the amounts, the dates, the percentage performed by the tenderer, and the contracting authorities (Annex G – Questionnaire 3);
- The detailed CVs of the specialists (minimum two (2)) who will be proposed to supervise/implement the contract, and who must have the qualifications stated above. The CVs must clearly indicate the experience and the level of linguistic ability in English.

In the case of consortium or subcontracting, the consortium or the tenderer with all subcontractors together have to provide evidence of technical and professional capacity as a whole (please see also 4.1 and/or 4.2 below).

3.3 Legal Position

Tenderers may choose between submitting a joint offer (see 4.1) as a Consortium / Grouping or introducing a bid as a single tenderer, in both cases with the possibility of having one or several subcontractors (see 4.2). Whichever type of bid is chosen, the tender must stipulate the legal status and role of each legal entity in the tender proposed (see also 5th bullet of point 4.1 below). To identify himself (and any other participating entities, if applicable), the tenderer must complete Questionnaire 1 in Annex G. Tenderers are also requested to complete a **Legal Entity Form** found in **Annex D**, accompanied by all documents and information indicated in the form.

The Legal Entity Form should be completed and signed by the representative(s) of the tenderer (who sign(s) the cover letter as per point 4 of the Invitation to tender) authorised to sign contracts with third parties.

The Legal Entity Form should not be submitted by sub-contractors (if any).

4. ADDITIONAL INFORMATION CONCERNING PARTICIPATION TO THIS TENDER PROCEDURE

Participation in Cedefop tendering procedures is open on equal terms to all natural and legal persons or groupings of such persons (consortia) falling within the scope of the Treaties. It includes all economic operators registered in the EU and all EU citizens. Pursuant to Article 106 of the general Financial Regulation the participation is also open to all natural and legal persons from non-EU countries that have a ratified agreement with the European Union in the field of public procurement on the conditions laid down in that agreement. Cedefop can therefore accept offers from and sign contracts with tenderers from 34 countries, namely: the 27 EU member States, 3 EEA Countries (Lichtenstein, Norway, Iceland) and 4 SAA Countries (Croatia, FYROM, Albania and Montenegro). The procurement (tender) procedures of Cedefop are not open to tenderers from GPA countries.

A natural or legal person can take part (as an individual tenderer or as a member of a consortium submitting a tender) in only one tender. In the opposite case all tenders in which that person has participated may be excluded from the evaluation.

4.1 Joint Offers/ Groupings (Consortia)

Groupings (consortia), irrespective of their legal form, may submit a tender on condition that it complies with the rules of competition. A consortium may be a legally-established permanent grouping, or informally constituted group of tenderers submitting an offer (joint offer) for a specific tender procedure.

Cedefop does not require consortia (if any) to have a given legal form in order to submit a tender, but reserves the right to require a consortium to adopt a given legal form before the contract is signed (if this change is necessary for proper performance of the contract). This can take the form of an entity with or without legal personality but offering sufficient protection of the contractual interests of Cedefop.

If awarded the contract, the tenderers of the group (consortium) will have an equal standing towards Cedefop in executing it.

A grouping (if any) of firms must nominate one party to be responsible for the receipt and processing of payments for members of the grouping, for managing the service administration, and for coordination.

Tenders submitted by consortia of firms must specify the role, qualifications and experience of each member or of the group (please fill-in the respective Questionnaires in Annex G).

Each member of the group (consortium) must provide the required evidence for the exclusion and selection criteria. Concerning the selection criteria, the evidence provided by each member of the group (consortium) will be checked to ensure that the consortium as a whole fulfils the criteria.

The offer has to be signed by all members of the group (consortium). However, if the members of the group so desire they may grant an authorisation to one of the members of the grouping (consortium). In this case they should attach to the offer a power of attorney (see model in Annex I) authorising this company or person to submit a tender on behalf of the grouping (consortium). For groupings not having formed a common legal entity, Annex I, model 1 should be used and separate legal entity forms (see point 3.3 and Annex D) should be completed and signed by all members. For groupings with a legal entity in place, Annex I, model 2 and one legal entity form (see point 3.3 and Annex D) should be completed and signed only by the single representative of the consortium.

The contract will have to be signed by all members of the group (consortium). If the members of the group (consortium) so desire, they may grant authorisation to one of the members of the grouping by signing a power of attorney. The same model as above duly signed and returned together with the offer (Annex I) is valid also for signature of the contract.

Partners in a joint offer assume joint and several liability towards Cedefop for the performance of the contract as a whole.

4.2 Subcontracting/Subcontractors

Subcontracting is defined as the situation where a contract has been or is to be established between Cedefop and a contractor and where the contractor, in order to carry out that contract, enters into legal commitments with other entities for performing part of the service. If awarded, the contract will be signed by the selected Tenderer (the Contractor), who will be vis-à-vis Cedefop the only contracting party responsible for the performance of this contract. Cedefop has no direct legal commitment with the subcontractor(s).

The contractor retains full liability towards Cedefop for performance of the contract as a whole. Cedefop will treat all contractual matters (e.g. payments) with the contractor, whether or not some tasks are performed by a subcontractor. Under no circumstances can the contractor avoid liability towards Cedefop on the grounds that the subcontractor is at fault.

Any subcontracting/subcontractor must be approved by Cedefop, either by accepting the bidder's tender, or, if proposed by the Contractor after contract signature, in writing by an exchange of letters. In the latter case subcontracting/subcontractor will be accepted only if it is judged necessary and does not lead to distortion of competition.

Tenderers are free to choose their subcontractors from both eligible and non-eligible countries. Thus, in principle all economic operators can act as subcontractors of eligible tenderers. However the sub-contracting of persons/ economic operators from non-eligible countries is limited to max 30% of the work by value.

The tenderer must clearly indicate the identity of each Subcontractor and the percentage of work by value that he will perform for this contract (please fill-in Annex G).

Only in cases when:

- a Subcontractor undertakes between 10% and 40% of the work by value,
- the total subcontracting is above 40% of the work by value, independently of the individual Subcontractor's contribution to the work by value,

the tenderer should submit with the offer:

1. the Declaration on exclusion criteria and absence of conflict of interest (Annex C) filled-in and signed by the respective Subcontractor;
2. the required documents related to the economic/financial and technical/professional capacity of the Subcontractor as described in points 3.2.1 and 3.2.2;
3. the Form in Annex J (Model of Letter of Intent for Subcontractor/s) duly filled-in and signed by each respective Subcontractor, stating his unambiguous undertaking to collaborate with the tenderer if the latter wins the contract. Also should be stated the roles, activities and responsibilities of the subcontractor(s) and the extent of the resources that the respective subcontractor will put at the tenderer's /contractor's disposal for the performance of the contract.

N.B. The Subcontractor(s) (if any) have to provide the documents to prove their capacity only for the parts of the contract that are relevant to them. The evidence provided will be checked to ensure that the tenderer with the subcontractor(s) altogether fulfil the criteria.

5. AWARD OF THE CONTRACT

Only the tenders meeting the requirements of the (no) exclusion and selection criteria will be evaluated in terms of quality and price.

The contract shall be awarded to the tenderer submitting the tender that offers the best-value-for-money as represented by the highest Total Score (TS) out of 100.

The Total Score (TS), comprising quality + price score, will be calculated for each tender by applying the formula below:

$$\text{Total Score (TS)} = X \cdot (\text{TQV}/100) + Y \cdot (\text{Cheapest TFO} / \text{TFO})$$

Whereby:

TQV = Total Quality Value of the tender, obtained as per point 5.1;

TFO = Total Financial Offer of the tender (as per point 5.4);

X is the weighting for quality score (TQV) and for this tender procedure it is fixed to **(50)**;

Y is the weighting for price (TFO) and for this tender procedure it is fixed to **(50)**.

Cheapest TFO is the Cheapest Tender Price of a technically compliant tender (i.e. among those having achieved a minimum of 50% of the possible score for each of the three award (evaluation) criteria below and in total a minimum of **60 out of 100 points** (TQV) in the technical evaluation – see below).

5.1. Technical evaluation

The assessment of the technical quality will be based on the ability of the tenderer to meet the purpose of the supply contract as described in the Terms of Reference.

The following Award Criteria for the technical evaluation will be applied to this tender procedure:

AWARD CRITERIA	Maximum number of points
(1) COMPLIANCE OF THE PROPOSED HARDWARE & SOFTWARE SOLUTION	30
1.1 Appropriateness/Convincingness of the BMS software (including Energy Management)	15
1.2 Appropriateness//Convincingness of the BMS Hardware (including Energy Management)	15
(2) ORGANISATION and METHODOLOGY	45
2.1. Methodology and project plan for the installation of the whole BMS system	20
2.2 Adequacy of proposed training	10
2.3 Methodology and project plan for preventive and corrective maintenance of the system, including response time for call-out services	15
(3) QUALITY ASSURANCE and RISK ASSESSMENT	25
3.1. Function and role of designated Project Team and back-up arrangements	10
3.2. Communication with Cedefop and reporting lines	5
3.3. Adequate consideration of possible hindrances (risk analysis)	10
Total Quality Value (TQV)	100

Tenders scoring less than a minimum of 50% of the possible score for each of the three award (evaluation) criteria above, and in total less than **60 (of a maximum of 100)** points against the technical criteria, will not be considered acceptable and will therefore not have their financial proposal evaluated.

5.2. Technical proposal

The tenderer's technical proposal should consist of a clear and comprehensive response to all requirements as per the Technical Specifications in point 2 above providing a practical, detailed description of the goods or services proposed for performance of the contract.

Tenderers are requested to organise the technical proposal in headings or to structure it in such a way as to ensure that the content of the technical proposal meets the requirements set out in the Technical Specifications as closely as possible and to facilitate the subsequent evaluation of tenders against the technical award criteria. It is up to the tenderer to present in his Technical Proposal a detailed organisation and methodology such that they fulfil (comply in full to) all requirements outlined in the Terms of Reference.

The Technical Proposal should prove that the Tenderer is capable of meeting the tender specifications, by providing all the information related to the scope of this project. All the information and means of proof provided in the tender commit the contractor throughout the duration of the contract.

For the technical evaluation of the proposal against the award (technical) criteria mentioned above, the tenderer must provide:

For award criterion 1.1:

Descriptions of proposed components and answers to Annex K1

For award criterion 1.2:

Descriptions of proposed components and answers to Annex K2

For award criterion 2.1:

- a detailed description of the methodological approach illustrating intended organisation and management of the tasks for the installation of the BMS system, including management of the project;
- description of the overall work plan, the organisation of the steps and activities to be performed for the services under the technical specifications; quantitative description of workload, measures for ensuring comfort of work (e.g. noise & dust);
- proposal of a detailed 'Work management schedule' (timetable with descriptions of the deliverables) table.

For award criterion 2.2:

A detailed description of the training plan for the Security and Facilities staff: the way custom training will be organised, the team involved in these tasks, timetable, content outline and materials that will be provided, contingency plans, assessment of training results, taking into account the specifications in section 2.4

For award criterion 2.3:

Description of the organisation of the steps and activities to be performed for the preventive and corrective annual maintenance, including: arrangements for response to call-out services (availability of parts, response time).

For award criterion 3.1:

Allocation and justification of distributing tasks to the whole team that will **implement** the contract, analytical description of the project manager's tasks (availability and daily presence, monitoring, supervision and organising of services, other tasks). Description of the measures foreseen by the contractor to ensure permanent availability of services, business continuity and quality during the entire life of the contract

For award criterion 3.2:

Description of the organisational arrangements for communication with Cedefop and reporting lines

For award criterion 3.3:

Assessment of likely difficulties in carrying out the work for installation of the new system and methodology for addressing them

Only the technically acceptable tenders as per the above will be subject to Financial (Price) Evaluation (5.3).

The tenderer shall identify a **Project Manager** within his organisation who will represent the **single contact point for all administrative and operational communication** in regards to the contract implementation (see 2.1.2.1). Cedefop will also designate the Contact Person in charge of handling the contact with the selected tenderer.

In addition to the above the tenderer must clearly specify which parts of the work will be subcontracted (if any) and specify the identity of those subcontractors only undertaking more than 10% of the work by value (or of all subcontractors if total subcontracting is above 40% of the work by value) as requested in point 4.2.

5.3. Financial evaluation

Only tenders scoring **60** points or more (of a maximum of 100 points) against the technical award criteria and **50%** or more of the possible maximum score for each of the 3 award criteria will have their financial proposal evaluated. The evaluation will be made on the basis of the **Total Price** offered in the Price schedule table (see point 5.4).

5.4 Financial proposal

The financial offer must be clear and in compliance with the tender specifications. The Financial Proposal should indicate the total price for the supply, delivery, installation, making operational all the equipment and software and for carrying out all the activities indicated in the Terms of Reference. The tenderers must duly fill in **Annex H** and present a detailed breakdown of the price offered. The Financial Proposal should clearly match the Terms of Reference and take account of the estimate of value (see point 1.5). All services that shall be procured should be included. Prices must be quoted in Euro and should include all daily expenses, including travel and accommodation expenses. No transportation costs, neither accommodation costs will be reimbursed to the contractor.

Expenses for meetings called by Cedefop, in the context of contract performance, to resolve problems of cooperation (if any) between the two parties or to eventually address repeated shortcomings in the Contractor's obligations, will be at the charge of the Contractor.

Information concerning price

- The prices quoted must be fixed and not revisable for the whole duration of the contract.
- Under Articles 3 and 4 of the Protocol on the Privileges and Immunities of the European Communities, Cedefop is exempt from all charges, taxes and dues, including value added tax (VAT). Such charges shall therefore not be included in the calculation of the price quoted.

5.4.1 Evaluation of abnormally low prices

If any tender's price appears to be abnormally low in relation to the supplies and the ancillary services offered, and in order to check if the tender can be considered valid, the evaluation committee will, before it may reject this tender, send a request for clarifications to ask for explanations on the components of the tender which it considers relevant to the presumed abnormally low price and shall verify those constituent elements taking account of the explanations received. If in that relation the tenderer cannot explain his price on the basis of the economy of the services or supplies offered, or the method used, or the technical solution chosen, or the exceptionally favourable conditions available to the tenderer, the tender will be rejected.

A price will be considered abnormally low if the financial offer of any tenderer is lower with more than the acceptable margin of deviation from the average price of the other technically acceptable offers (please note that definition of which offers are technically acceptable/compliant is given in points 5.1 and 5.3 above). The actual deviation will be calculated as % as follows:

The difference between the average price of the other technically acceptable offers and the value of the abnormally low financial offer will be divided by the average price of the other technically acceptable offers and the estimated budget (see point 1.5).

The acceptable margin of deviation is set to **30%**.

The approach of the Evaluation Committee to identify and eliminate abnormally low tenders will be the following:

- a) apply the acceptable margin of deviation from the average price of the other technically acceptable offers + the estimated budget and set aside the offers that go beyond it;
- b) check if specific notes or specific items included in the offer justify to some extent the deviation, and consider asking on that basis clarification(s) from the tenderer;
- c) decide on the acceptability of the offer on the basis of the clarification reply received.

6. INFORMATION ON PRESENTATION AND CONTENT OF TENDER

It is important that tenderers provide all documents necessary to enable the evaluation committee to assess their tender. Tenderers should fully respect the instructions indicated under points 2, 3 and 4 of this open invitation to tender.

In addition, below you will find details of the required documentation.

6.1 Envelope A - Supporting documents

One original and one copy of:

- cover letter, signed by the person/s (name and position) that is/are authorised to sign the contract in case of contract award
- the exclusion criteria declaration requested in point 3.1 and standard template found in Annex C;
- the selection criteria documents as requested in points 3.2, 4.1, 4.2 and the Questionnaires 1 3 as found in Annex G
- Power of Attorney (Model 1 or 2), as required in point 4.1 (if applicable) and found in Annex I
- Model of Letter of Intent for Subcontractor/s as required in point 4.2 (if applicable) and found in Annex J
- the Legal Entity Form as requested in point 3.3 and found in Annex D
- the Financial Identification Form as found in Annex E
- the checklist found in Annex F

In the case of tenders submitted by groupings (consortia) or involving contribution by subcontractors, envelope A should also contain all relevant documentation as requested in points 4.1 and 4.2 respectively (with reference to points 3.1, 3.2 and 3.3).

6.2 Envelope B – Technical proposal

One original signed unbound version, three bound copies of:

the Technical Proposal providing all information requested in point 5.2 and the Questionnaires in Annexes K1 and K2, including information relevant to subcontracting (if any) as requested in point 4.2.

6.3 Envelope C – Financial proposal

One original signed version and three copies of:

the Financial Proposal containing all information requested in point 5.4 and Annex H duly filled.

ANNEX A

Contract Notice

(Given as separate file in *.pdf)

ANNEX B

Draft Contract

(Given as separate file in *.pdf)

ANNEX C

**Declaration of honour with respect to
the Exclusion Criteria and absence of conflict of interest**

(Given as separate file in *.doc)

ANNEX D

Legal Entity Form

Legal Entity Form to be downloaded, depending on the nationality and legal status of the tenderer, from the following website:

http://ec.europa.eu/budget/contracts_grants/info_contracts/legal_entities/legal_entities_en.cfm

Legal Entity Form to be completed and signed by a representative of the tenderer (name and function) authorised to sign contracts with third parties. It should not be signed by sub-contractors (if any).

ANNEX E

Financial Identification Form

To be downloaded, depending on the nationality of the tenderer, from the following website:

http://ec.europa.eu/budget/contracts_grants/info_contracts/financial_id/financial_id_fr.cfm

and completed and signed by an authorised representative of the tenderer (with indication of name and function), but not by subcontractors.

PLEASE NOTE:

Please indicate the BIC (Bank Identification Code) in the REMARKS box of the downloaded form.

ANNEX F

CHECK LIST OF MANDATORY DOCUMENTS

The checklist must be used to ensure that you have provided all the documentation for this tender and in the correct way. This checklist should be included as part of your offer.

Please Tick ✓ the boxes provided

Mandatory documents to be included as part of the tender	Reference paragraph	Included		If the document is not included, please provide an explanation for the reason
		Yes	No	
Envelope 'A' must contain				
one original and one copy of:	6.1	<input type="checkbox"/>	<input type="checkbox"/>	
- Cover letter, signed by the person/s that is/are authorised to sign the contract in case of contract award (name and position of the individual(s) entitled to sign contract)	Art. 4 of Invitation to tender; 6.1	<input type="checkbox"/>	<input type="checkbox"/>	
- Exclusion Criteria Declaration (including those of consortium members and subcontractors, if applicable)	3.1 & Annex C	<input type="checkbox"/>	<input type="checkbox"/>	
- selection criteria documents (If applicable, including those of consortia and subcontractors)	3.2, 4.1, 4.2, 6.1	<input type="checkbox"/>	<input type="checkbox"/>	
- Questionnaires 1-3 (Annex G)	3.2, 3.3, 4.1 & Annex G	<input type="checkbox"/>	<input type="checkbox"/>	
- Power of attorney of partners in joint bid / Consortium (if applicable)	4.1 & Annex I (model 1 or 2)	<input type="checkbox"/>	<input type="checkbox"/>	
- Letter of intent of subcontractor (if applicable)	4.2 & Annex J	<input type="checkbox"/>	<input type="checkbox"/>	
- Legal Entity Form	3.3 & Annex D	<input type="checkbox"/>	<input type="checkbox"/>	
- Financial Identification Form	6.1 & Annex E	<input type="checkbox"/>	<input type="checkbox"/>	
- this Checklist	6.1 & Annex F	<input type="checkbox"/>	<input type="checkbox"/>	
Envelope 'B' must contain				
one original and three copies of:	6.2	<input type="checkbox"/>	<input type="checkbox"/>	
- the Technical Proposal	5.2 & Annexes K1 & K2	<input type="checkbox"/>	<input type="checkbox"/>	
Envelope 'C' must contain				
one original and three copies of:	6.3	<input type="checkbox"/>	<input type="checkbox"/>	
- the Financial Proposal	5.4 & Annex H	<input type="checkbox"/>	<input type="checkbox"/>	

The tenderers should also ensure that:

<input type="checkbox"/>	the offer is formulated in one of the official languages of the European Union.
<input type="checkbox"/>	both the technical and financial proposals of the offer are signed by duly authorised agent.
<input type="checkbox"/>	the offer is perfectly legible in order to rule out any ambiguity.
<input type="checkbox"/>	the offer is submitted in accordance with the envelope system as detailed in the invitation to tender point 3.
<input type="checkbox"/>	the outer envelope bears the information mentioned in the invitation to tender point 3.

ANNEX G

QUESTIONNAIRES 1 – 3

(Given as separate files in *.doc)

ANNEX H

FINANCIAL PROPOSAL

(Given as separate *xls file, to be filled in by the tenderer)

ANNEX I

POWER OF ATTORNEY - MODELS 1 & 2

(Given as separate files in *.doc)

ANNEX J

MODEL OF LETTER OF INTENT FOR SUBCONTRACTOR/S

(Given as separate file in *.doc)

ANNEX K1

QUESTIONNAIRE FOR AWARD CRITERION 1.1

(Given as separate file in *.doc)

ANNEX K2

QUESTIONNAIRE FOR AWARD CRITERION 1.2

(Given as separate file in *.doc)

ANNEX 1

MODULAR BUILDING CONTROLLERS – CURRENT STATE

(Given as separate files)

ANNEX 2

BMS SENSORS - CURRENT STATE

(Given as separate files)

ANNEX 3

ELECTROMECHANICAL DRAWINGS - CURRENT STATE

(Given as separate files)

ANNEX 4

TIME SCHEDULE

(Given as separate file)

ANNEX 5

TOPOLOGY & DRAWINGS-FUTURE STATE

(Given as separate files)

ANNEX 6

FUTURE NEEDS POINT MODULES & FIELD DEVICES LIST R1

(Given as separate files)