

APPENDIX 3F

**LOT 6 SPECIFICATION
MOBILE X-RAY SYSTEMS AND ASSOCIATED OPTIONS AND RELATED SERVICES**

1. Introduction

- 1.1. This Lot is for the supply of mobile X-Ray systems for a range of clinical applications to provide radiographic images of the patient in a point of care environment. Dependent upon the application the system will incorporate an X-Ray system, one or more detectors, motorised drive mechanism with battery back-up and must include IT connectivity.
- 1.2. The core product lines within this Lot are as follows:

Line Number	
1	Mobile Radiographic X-Ray System
2	Mobile Digital Radiographic X-Ray System
3	Mobile Digital Radiographic X-Ray System (no detector)

- 1.3. Product line(s) must be supplied with a minimum 7 year expected lifecycle under proper use and maintenance.

2. Criteria applicable across all product lines

- 2.1. A mobile X-Ray system must incorporate a high frequency X-Ray generator and tube and control panel which as a minimum must have the following features:
 - 2.1.1. The X-Ray generator must have a power of at least 2.5 kilowatts (kW).
 - 2.1.2. The X-Ray tube must have inherent filtration equivalent to at least 1.1 mm Al.
 - 2.1.3. The X-Ray tube must have a rotating or fixed anode.
 - 2.1.4. The maximum available voltage must be at least 100kVp (Peak Kilo Voltage).
 - 2.1.5. Operation of mobile radiographic X-Ray systems must require a mechanical or electronic key to prevent unauthorised use.
 - 2.1.6. The X-Ray control switch must be remote control (cable or infrared).
 - 2.1.7. The maximum milliamperere per second must be at least 20 mAs.
 - 2.1.8. The control panel must include digital parameter display.
 - 2.1.9. The control panel must allow the user to input independent settings of kVp and mAs.
 - 2.1.10. Conventional thermionic X-ray tubes must have a minimum heat capacity of 50,000 Heat Units (HU).
 - 2.1.10.1. New technology such as Carbon Nano X-ray sources must have minimum heat capacity of 112kj.
 - 2.1.11. The X-Ray tube must be height adjustable.

Document #: LEGAL TEMP 810-o6		
Revision: 4		Page 1 of 3

- 2.1.12. The maximum height of the X-Ray focal spot above the floor must be at least 1.7 metres.
- 2.1.13. The collimator must be user adjustable with a field light indicator.
- 2.1.14. The X-Ray tube must have a horizontal extension of at least 1 metre.
- 2.1.15. The X-Ray tube must rotate in the arm axis or the tube axis or by simple movement of the whole mobile radiographic system.

2.2. Mobile X-Ray system drive mechanism and batteries must as a minimum include the following features:

- 2.2.1. For those systems that operate with a drive motor – the system must have a maximum speed 2 mph (related to drive).
- 2.2.2. The maximum climbable incline must be at least 5 degrees.
- 2.2.3. The mobile X-Ray system must include a braking system.
- 2.2.4. The unit must clearly display remaining battery capacity where applicable.
- 2.2.5. The maximum time to recharge the battery from discharged to fully charged must be no more than 10 hours.
- 2.2.6. The battery must be charged through a standard UK (240 Volt) power supply with any required cables or charging units supplied free of charge.

3. Line 1 – Mobile Radiographic X-Ray System

- 3.1. Mobile X-Ray systems used to acquire general radiographic images at the point of care must have the following features:
 - 3.1.1. A single cassette compartment within the system.

4. Lot 8 – Mobile Digital Radiographic X-Ray System

- 4.1. Mobile digital X-Ray systems used to acquire general purpose radiographic studies at the point of care must have the following features:
 - 4.1.1. Must conform to DICOM 3.0 and the SOP classes in Section 4.2 must be available to the customer on request.
 - 4.1.2. The system must include a monitor or integral screen to allow the visualisation of captured images.
 - 4.1.3. A preview image must be displayed within 5 seconds of completion of the exposure.
 - 4.1.4. The image display must occupy at least 8" x 6.5" of the available display size.
 - 4.1.5. The system must allow the user to select wired or wireless ethernet connection to the PACS/RIS (Picture Archiving and Communication System / Radiographic Information System).
 - 4.1.6. When connected to the network, the system must allow the user to access the work list.
- 4.2. A mobile X-Ray system must meet the following requirements for IT connectivity in terms of SCU (Service Class User) and/or SCP (Service Class Provider).

Document #: LEGAL TEMP 810-06		
Revision: 4		Page 2 of 3

- 4.2.1. Basic greyscale print management meta SOP class - SCU must be available.
- 4.2.2. Modality performed procedure – SCU minimum.
- 4.2.3. Storage commitment – SCU minimum.
- 4.2.4. Verification – SCU/SCP minimum.
- 4.2.5. Greyscale standard display function - SCU/SCP must be available.
- 4.2.6. The proposed mobile radiographic system(s) must support the following IHE (Integrating the Healthcare Enterprise) profiles:
 - 4.2.6.1. Scheduled workflow (SWF).
 - 4.2.6.2. Patient information reconciliation (PIR).
 - 4.2.6.3. Consistent presentation of images (CPI).

5. Line 3 - Mobile Digital Radiographic X-Ray systems (no detector)

- 5.1. Mobile digital X-Ray systems used to acquire general purpose radiographic studies at the point of care must have the following features:
 - 5.1.1. Must conform to DICOM 3.0 and the SOP classes in Section 5.2 must be available to the customer on request.
 - 5.1.2. The system must include a monitor or integral screen to allow the visualisation of captured images.
 - 5.1.3. A preview image must be displayed within 5 seconds of completion of the exposure.
 - 5.1.4. The image display must occupy at least 8" x 6.5" of the available display size.
 - 5.1.5. The system must allow the user to select wired or wireless ethernet connection to the PACS/RIS (Picture Archiving and Communication System / Radiographic Information System).
 - 5.1.6. When connected to the network, the system must allow the user to access the work list.

- 5.2. A mobile X-Ray system must meet the following requirements for IT connectivity in terms of SCU (Service Class User) and/or SCP (Service Class Provider).
 - 5.2.1. Basic greyscale print management meta SOP class - SCU must be available.
 - 5.2.2. Modality performed procedure – SCU minimum.
 - 5.2.3. Storage commitment – SCU minimum.
 - 5.2.4. Verification – SCU/SCP minimum.
 - 5.2.5. Greyscale standard display function - SCU/SCP must be available.
 - 5.2.6. The proposed mobile radiographic system(s) must support the following IHE (Integrating the Healthcare Enterprise) profiles:
 - 5.2.6.1. Scheduled workflow (SWF).
 - 5.2.6.2. Patient information reconciliation (PIR).
 - 5.2.6.3. Consistent presentation of images (CPI).

Document #: LEGAL TEMP 810-o6		
Revision: 4		Page 3 of 3