

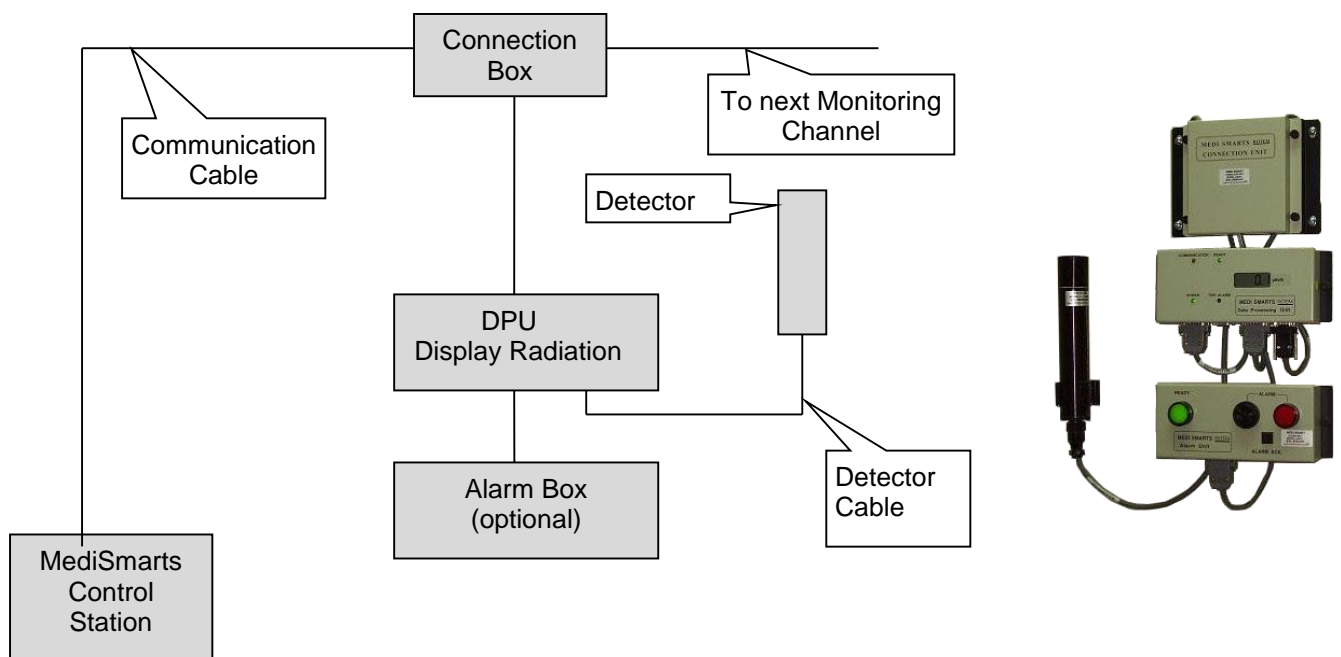
November 20, 2013

## Preparing the site for MediSmarts.

### Foreword

The following document is meant to advise requirements of the MediSmarts system in the pre-installation / preparation stage. We appreciate your help in preparing the site and advising us. Your help and cooperation will allow our Engineers to prepare the system in the shortest time, with the best results.

### A Typical Monitoring Channel with Alarm Unit



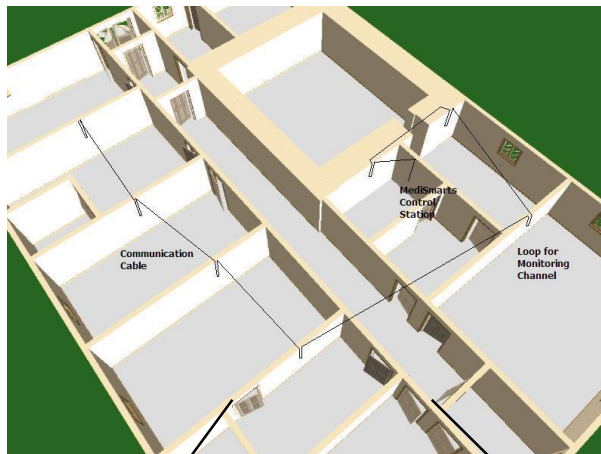
### Communication Cable.

Prior to the arrival of our Engineer the communication cable should be run in the conduits from each monitoring channel. This means that after the responsible RPO (Radiation Protection Officer) decides where each monitoring channel will be placed. It is possible to run the communication cables and leave a 1.5 meter loop dropping from above the false ceiling, to each point where the monitoring channel will be situated.

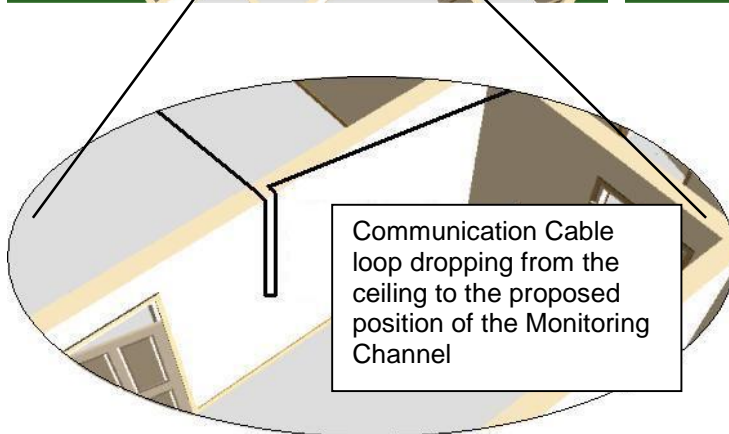
There are two possibilities for stringing out the Communication Cable:

1. Daisy chain (serial) connection between monitoring channels culminating in the Control Room, next to the MediSmarts Control Station
2. Running a separate communication from the control room to the location of the monitoring channel.
3. A combination of the two possibilities is also acceptable. The software sends a request for data to all monitoring channels but specifies the number of the monitoring channel and only this monitoring channel answers.

Option #1



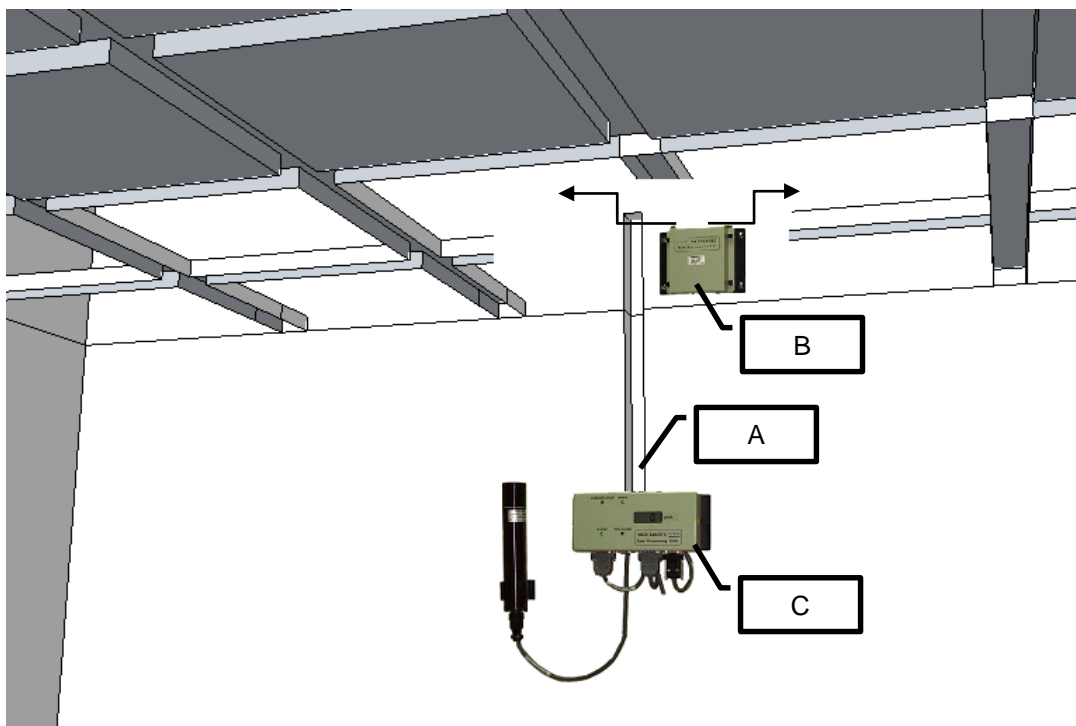
Option #2



Rotem supplies 50 meters of cable in the package to connect the monitoring channels as per option #1. If the site requires individual cables, extra cable should be purchased. The cable required is: 4 wires in 2 twisted pairs, shielded AWG22

For sites that require a clean installation we recommend the following configuration:

1. A conduit (A), 1.5 cm diameter, is created in the wall from above the acoustic ceiling line to the position of the DPU (1.5 meters above floor line).
2. The Connection box (B) is mounted above the acoustic ceiling line
3. The communication cable is fed from the previous monitoring channel to this Connection Box and from this Connection Box to the next Monitoring Channel
4. A third Communication Cable is fed from this Connection Box to the DPU (C) in the room through the conduit.



### The Alarm Box

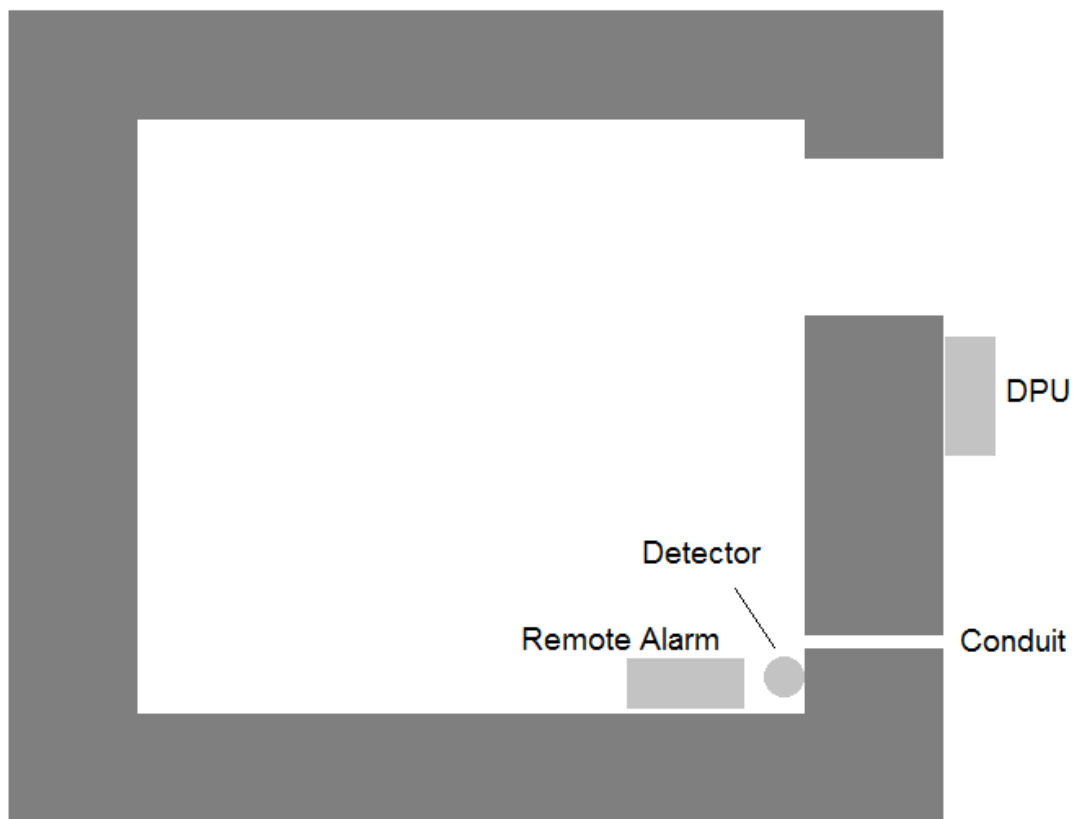
The Alarm box will be installing 20 cm. below the DPU.  
Please request if you need longer than that.

## Cyclotron installation

In the cyclotron vault, care should be taken not to mount the detector or DPU in a direct line with the target in order to protect the electronic components from radiation damage.

Some sites prefer to install the DPU outside the vault and the detector and Alarm Unit inside. The monitoring channel for the cyclotron vault is supplied with a 30 m cable between the detector and DPU. If an Alarm Unit is also required then both the detector cable and Alarm Unit cable should be laid inside the vault. Same applies for Remote Display Unit.

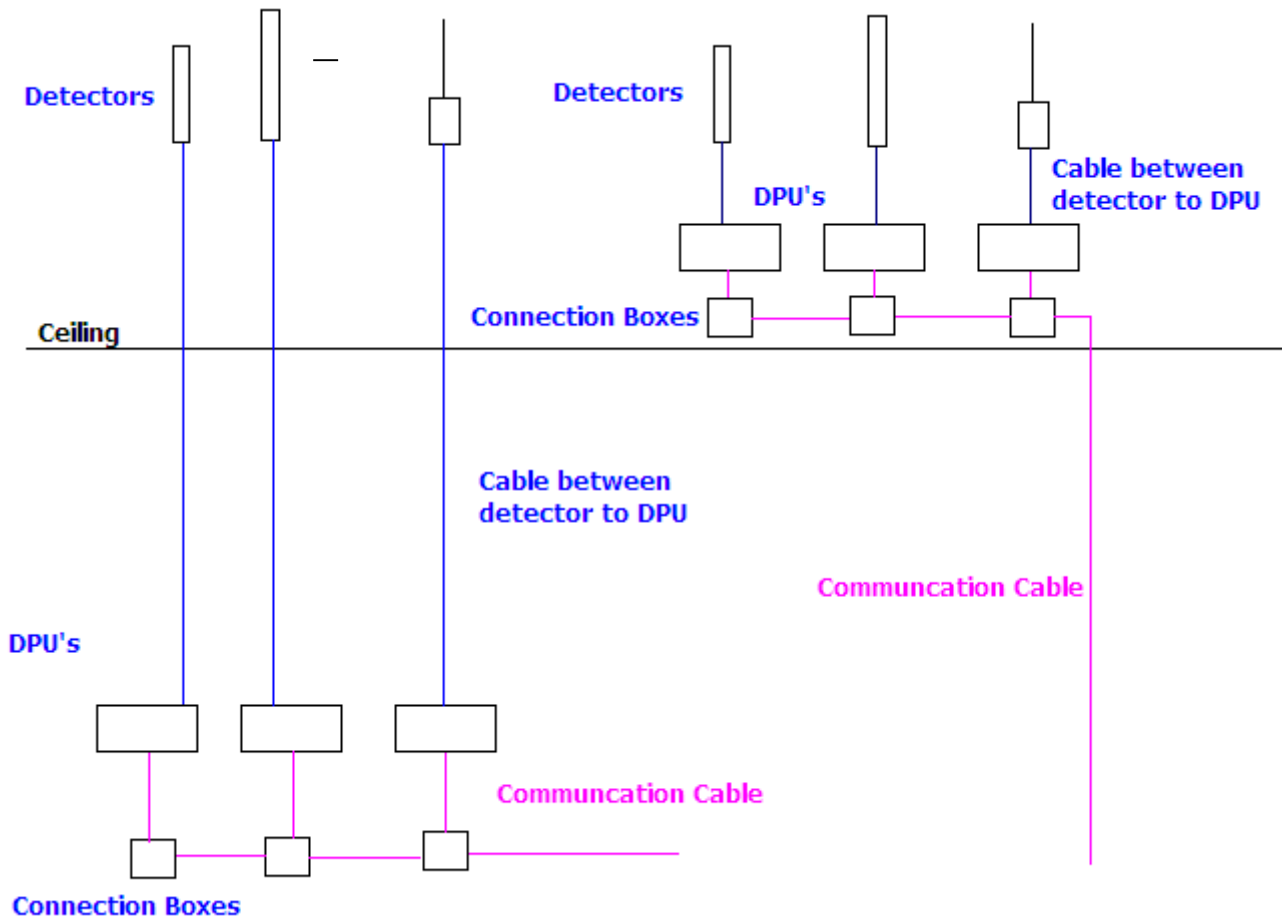
**Please prepare a conduit for the detector cable.** The communication cable will run from the DPU to the Control Room and not from the detector to the control Room.



### Air duct Monitoring

For the air duct monitoring, we supply 30 meters of cable between the DPU and detector. Again here there are two options available for the site, the selection should be based on site's requirements.

<p>Option #1          Detectors mounted in the Exhaust Stack          DPU's mounted near Control Station          (utilizing 30 meter detector cable)</p>	<p>Option #2          Detectors mounted in the Exhaust Stack          DPU's mounted close to Exhaust Stack          (utilizing short detector cable)</p>
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### **For the installation**

#### **The following items should be completed before the arrival of the Rotem Engineer**

Check that the communication cables have been run in the site.

For all area monitors the detector should be mounted wherever radioactive materials are being handled or monitored. The detector should be mounted at "heart level" (1.5 meters above the floor).

For all the area monitoring channels the detector will be installing close to the DPU.

For all air ducts and cyclotron vault monitoring channels the detector will be installing no longer that 30 meters from the DPU.

For all Hot Cell monitoring channels the detectors will be installed no longer than 5 meters from the DPU

The detector cable has been strung from the area where the DPU will be mounted, into the roof areas close to the required position of the detector in the exhaust stack

The Communication cable has been run from each area where the DPU has been planned to the area where the MediSmarts Control Station is to be installed.

For All the channels the Alarm Box will be installing no longer that 0.5 meter from the DPU.

At this stage the cables (both detector to DPU and communication cable) should be laid. It is not necessary to mount the DPU's or DPU mounting brackets.

#### **Assistance required by contractor to Engineer during installation**

All the Monitoring Channel connection boxes and DPU Mounting plates should be fixed to the walls in the required places.

For drilling a 8 cm (3") hole in the air duct for the detector and mounting it.

For drilling a 10 mm (0.4") hole in the air duct for the flow meter.

Our Engineer requires a work space (table and chair) next to the computer in the Control room and a ladder to help him reach the connection areas.

If there are exceptions please advise