

MIRION
Connect **21**
Annual Users' Conference



Dose Management and Access Control Systems for Nuclear Facilities (DosiServ™ Software)

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Agenda

- Introduction to DosiServ
- Architecture
- Features
- Advanced Feature
 - Dose storage
 - Job code/RWP handling
 - Alarm Settings algorithm
 - Job Change with use cases

Introduction to DosiServ

- The DosiServ dosimetry system is an integrated state **dose management system**.
- It is fully **scalable** in order to comply with nuclear power plant as well as smaller industry expectations.
- Main users are from :
 - ☢ Nuclear industry (NPP, fuel cycle) (Europe Only)
 - 🧪 Laboratories and education
 - 🛡 Homeland security and defense
 - ⚙ Industry and manufacturing
 - 🏥 Healthcare



Architecture

- The DosiServ dosimetry system operates

- Electronic dosimeters (MIRON's whole range, in hands free mode)
- Readers (industrial, and/or PC based kiosks)
- Computer system (server & clients)



LDM 3200



LDM 3000



Desktop



DMC 2000 S



DMC 2000 GN



SORs



DMC 3000



DMC 3000 Beta

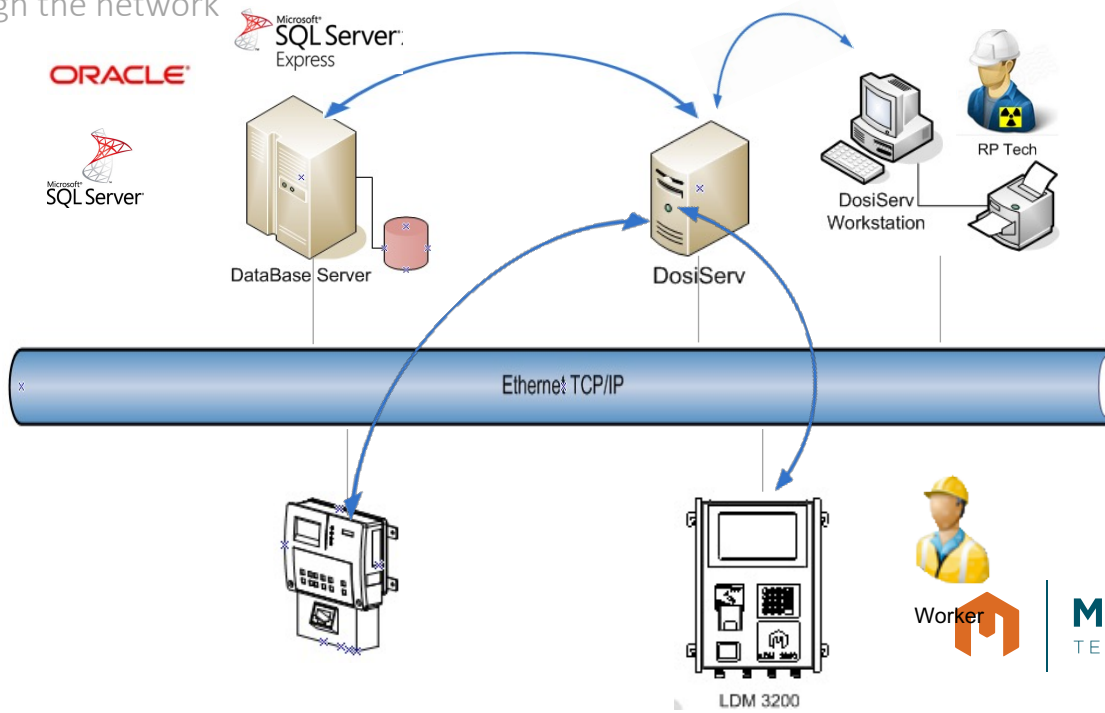


DMC 3000 Neutron

Architecture

- The DosiServ dosimetry system operates on the **network** and uses a **database** to store all information

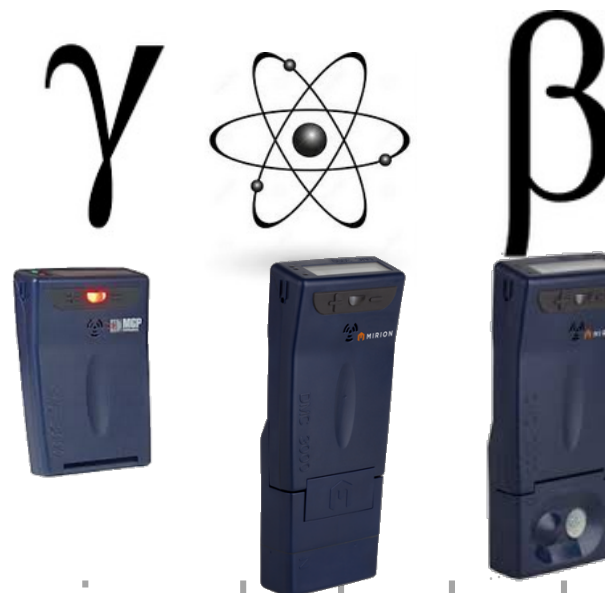
- The main software reside on a server
- Main software can connect to a database server or host its own database
 - Oracle
 - SQL Server
 - SQL Server express
- Readers connect to DosiServ through the network
- Client station for administration connects to DosiServ



Features

Handle electronic dose data for

- Workers (individual)
- Job (RWP) codes
- Various controlled areas (zones)



Offer access control capabilities, in order to check

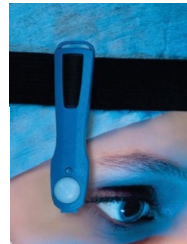
- Medical/training due dates when issuing an electronic dosimeter.
- Check worker's accumulated doses versus configurable dose limits.
- Any other worker qualification the Radiation Protection procedure should require








Features

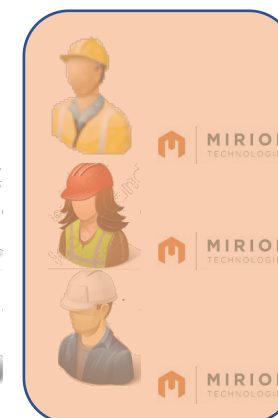
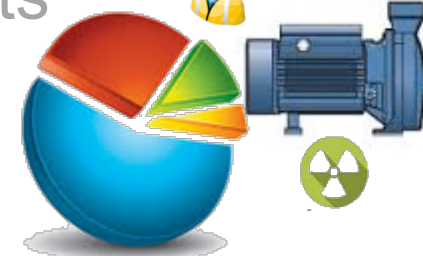
Manages official (TDL/OSL) dose data for worker

- Can be connected to TLD readers in order to import data
- Live DIS -1 reader connection
- Any kind of dose can be created to be monitored (Ex WBC / Eye)
- Dose comparison summaries can be made
- Dose records can be checked at access time



Features

-  Dosimeters can be used as pool dosimeter or individual
-  TLD can be verified by the reader at entry
-  Badge reader can be connector
-  Job dose allows to perform collective dose reports
-  Filters can be applied to users




Features

 Alarms based on job codes








 System can (configurable) check for dosimeter serial number and associated calibration due date.



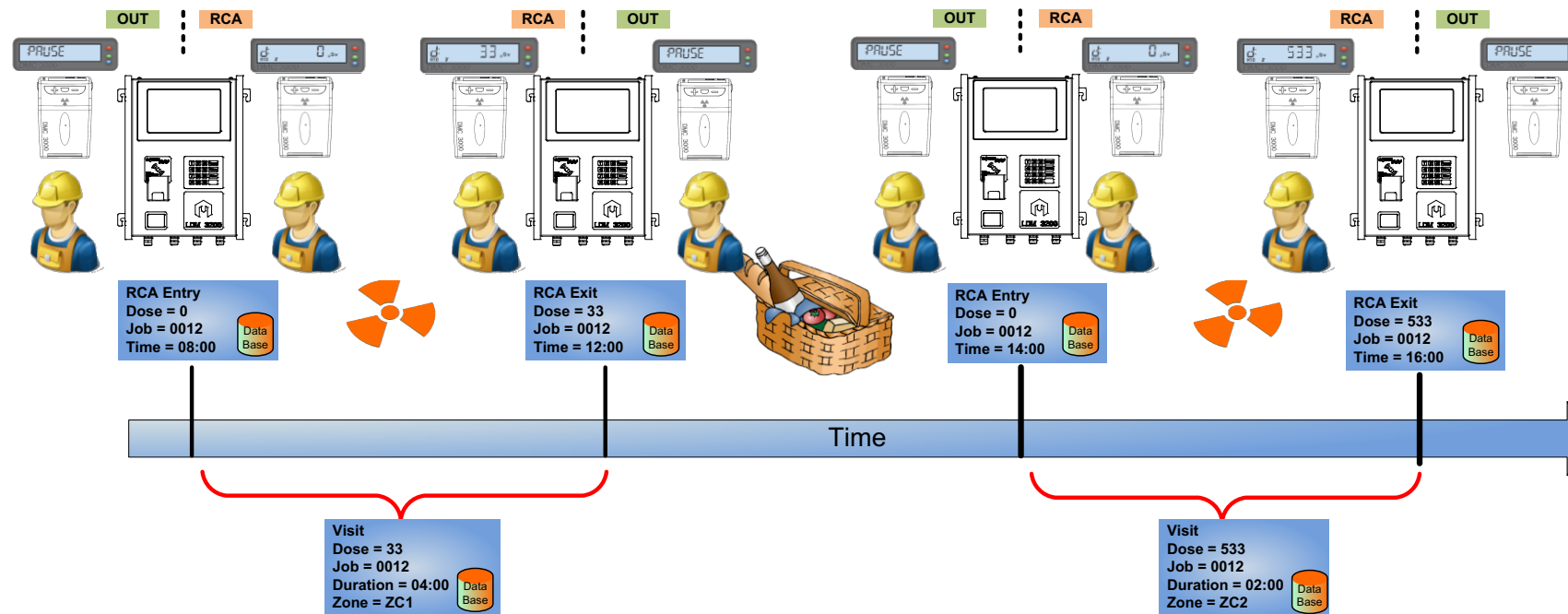
 Off line mode → system records locally and transfer automatically when connection is back.



-  Smart mode for
 -  Workers : dose setting
 -  Workers : qualification dates
 -  Jobs / RWP / TLD
 -  Job/Worker authorization

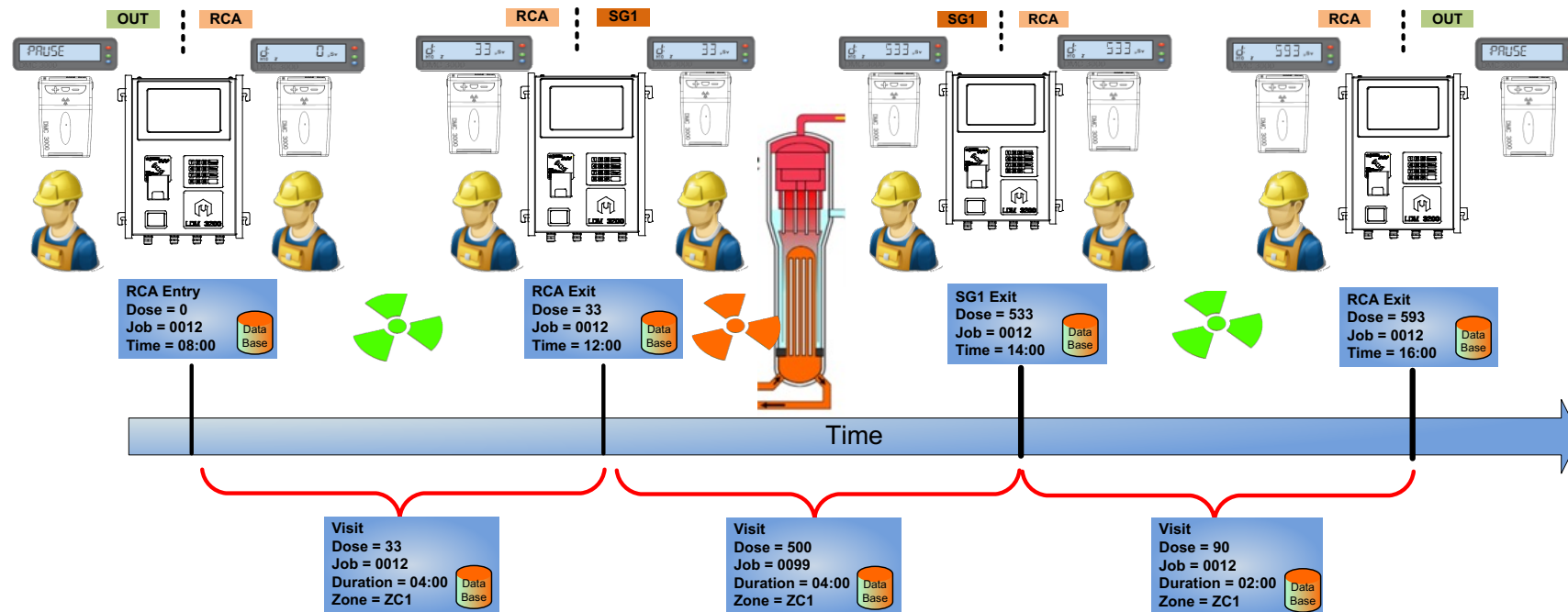
Advanced

How does the system behaves for dose calculations



Advanced

How does the system behaves for dose calculations

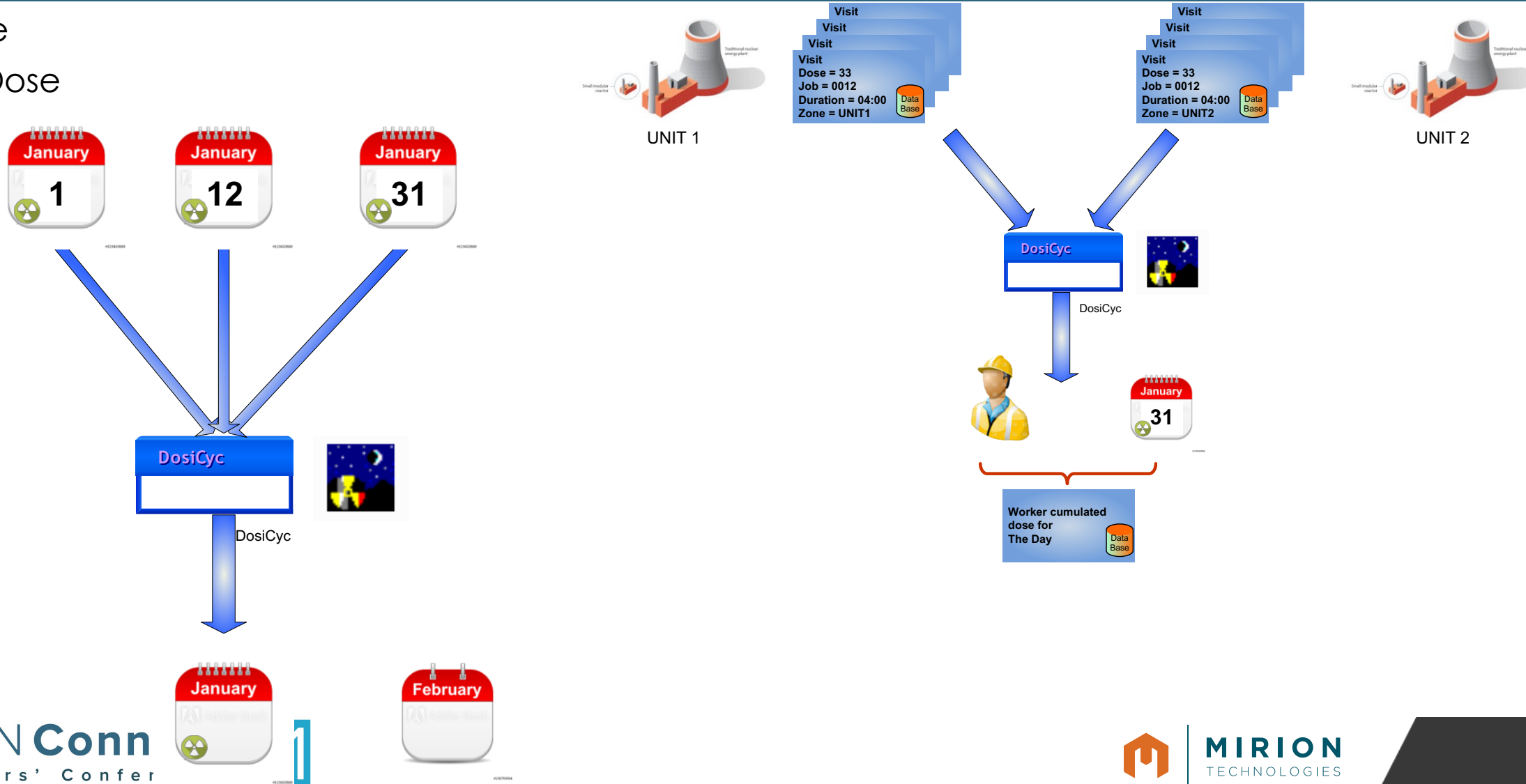


Advanced

How does the system behaves for dose calculations

 Daily dose

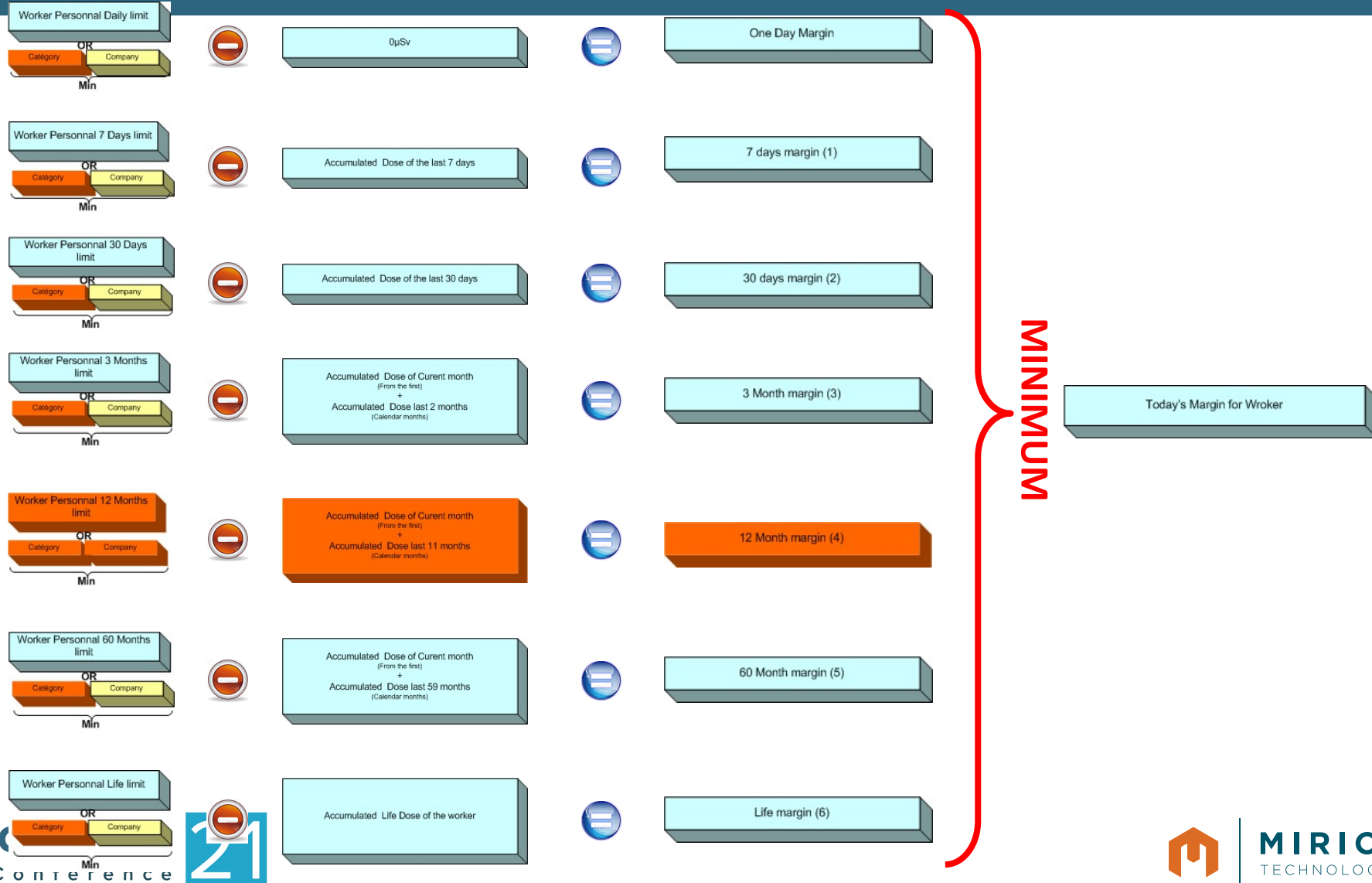
 Monthly Dose



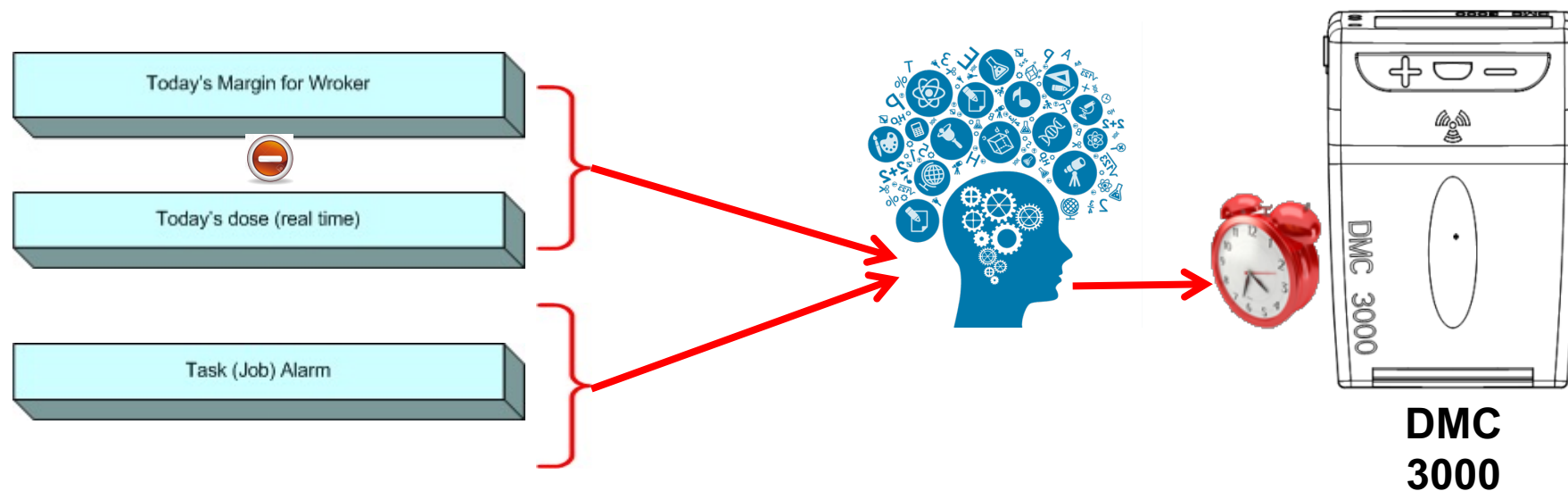
Advanced Dose Credit and Dose Alarms



Advanced Dose Credit and Dose Alarms



Advanced Dose Credit and Dose Alarms



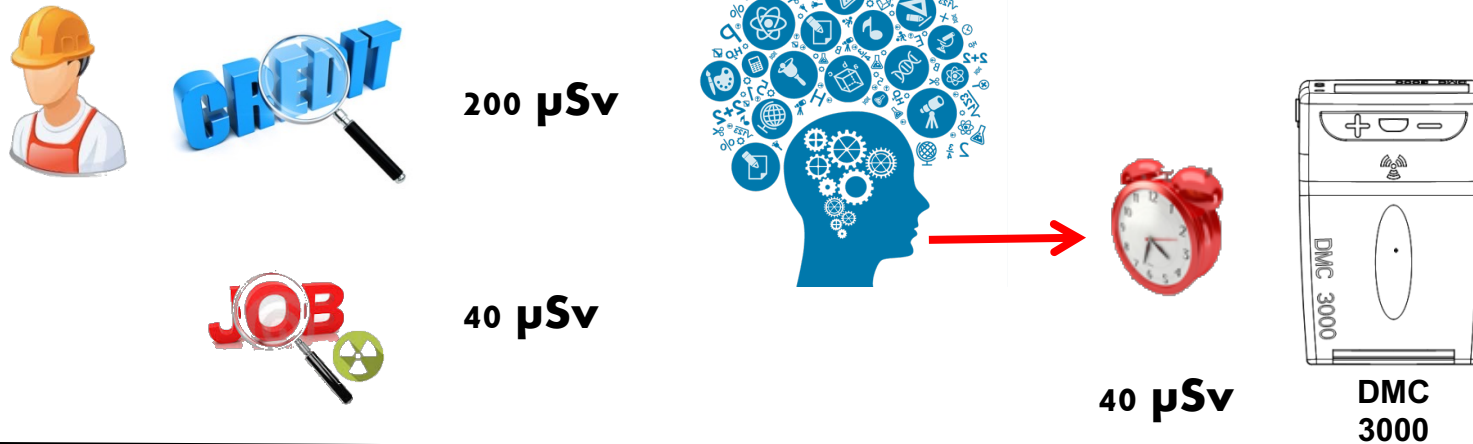
Dose Alarm Calculations

3 modes

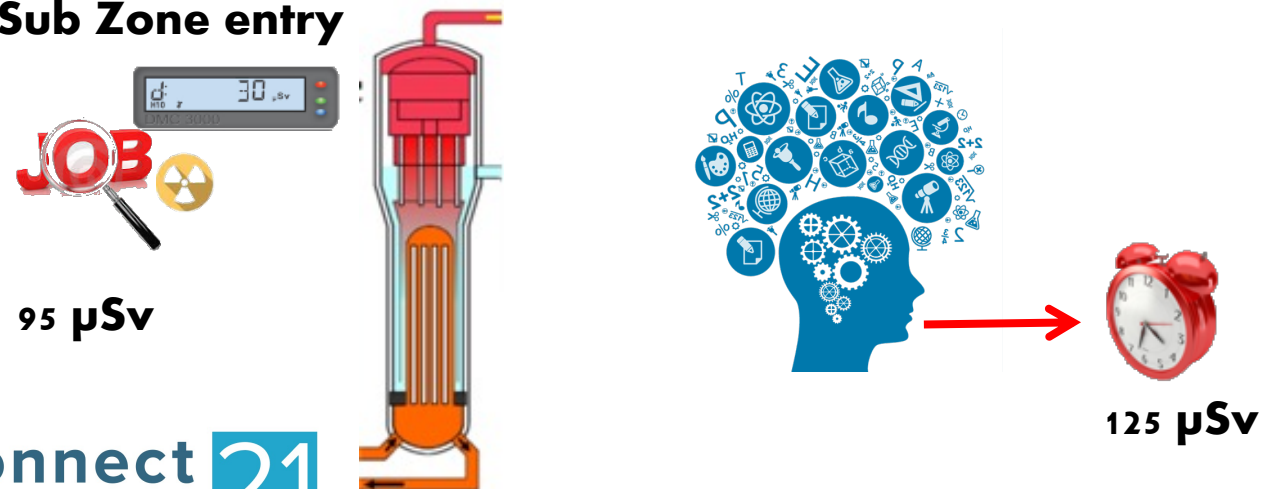
- a) Standard mode
- b) Advanced mode
- c) Smart mode

Dose alarm calculation Smart mode

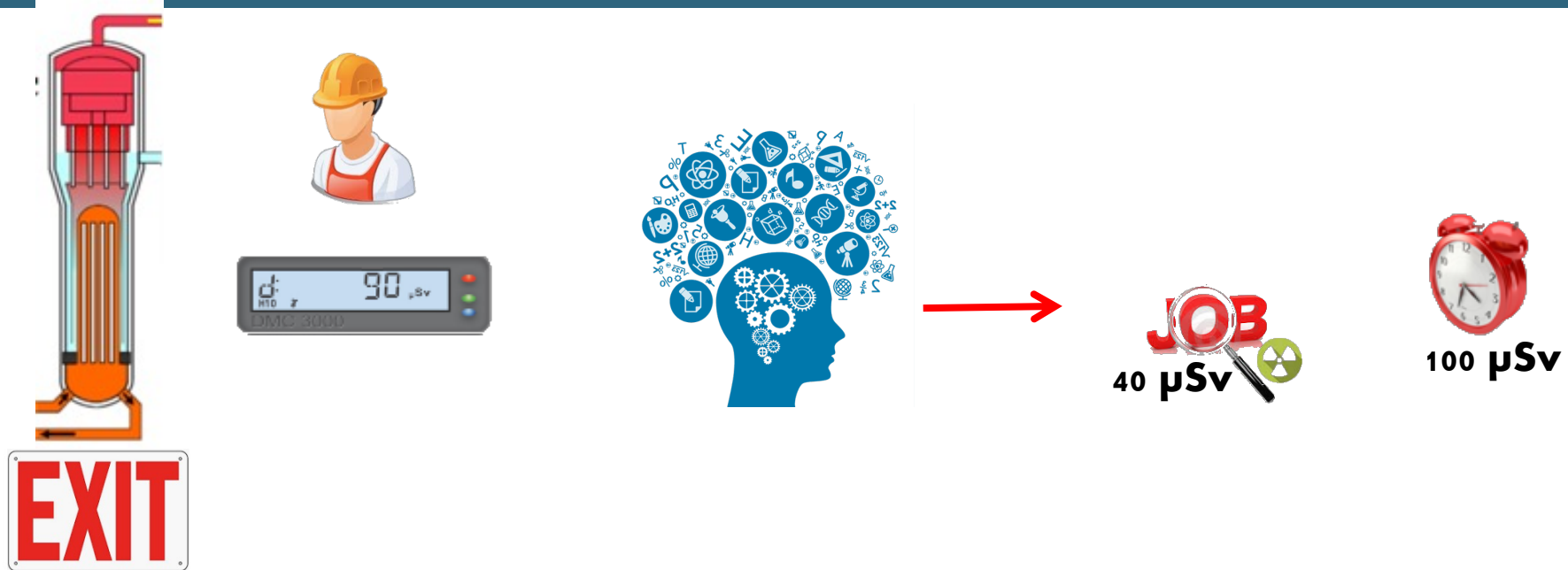
c) Smart mode



Sub Zone entry



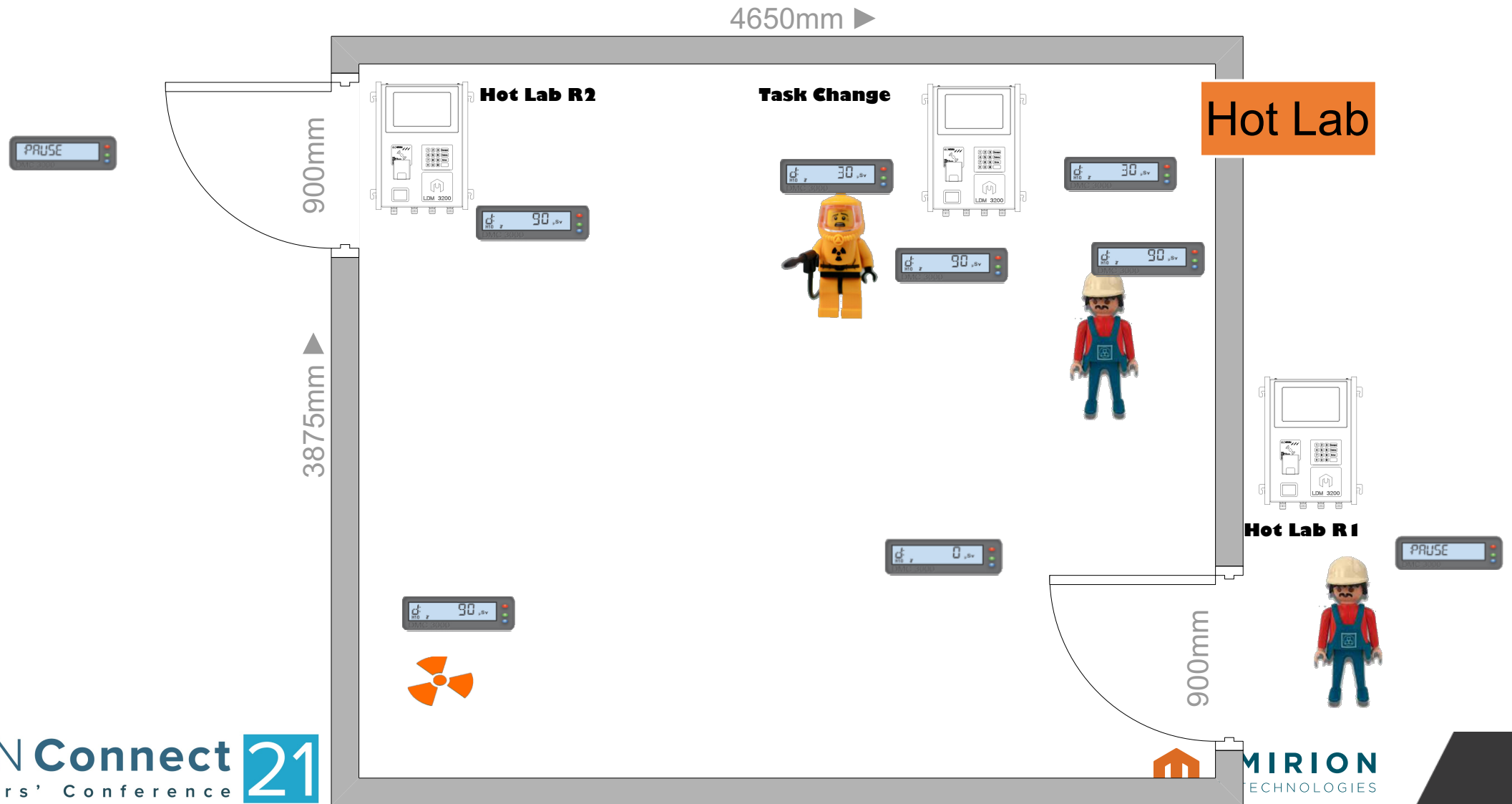
Dose alarm calculation Smart mode



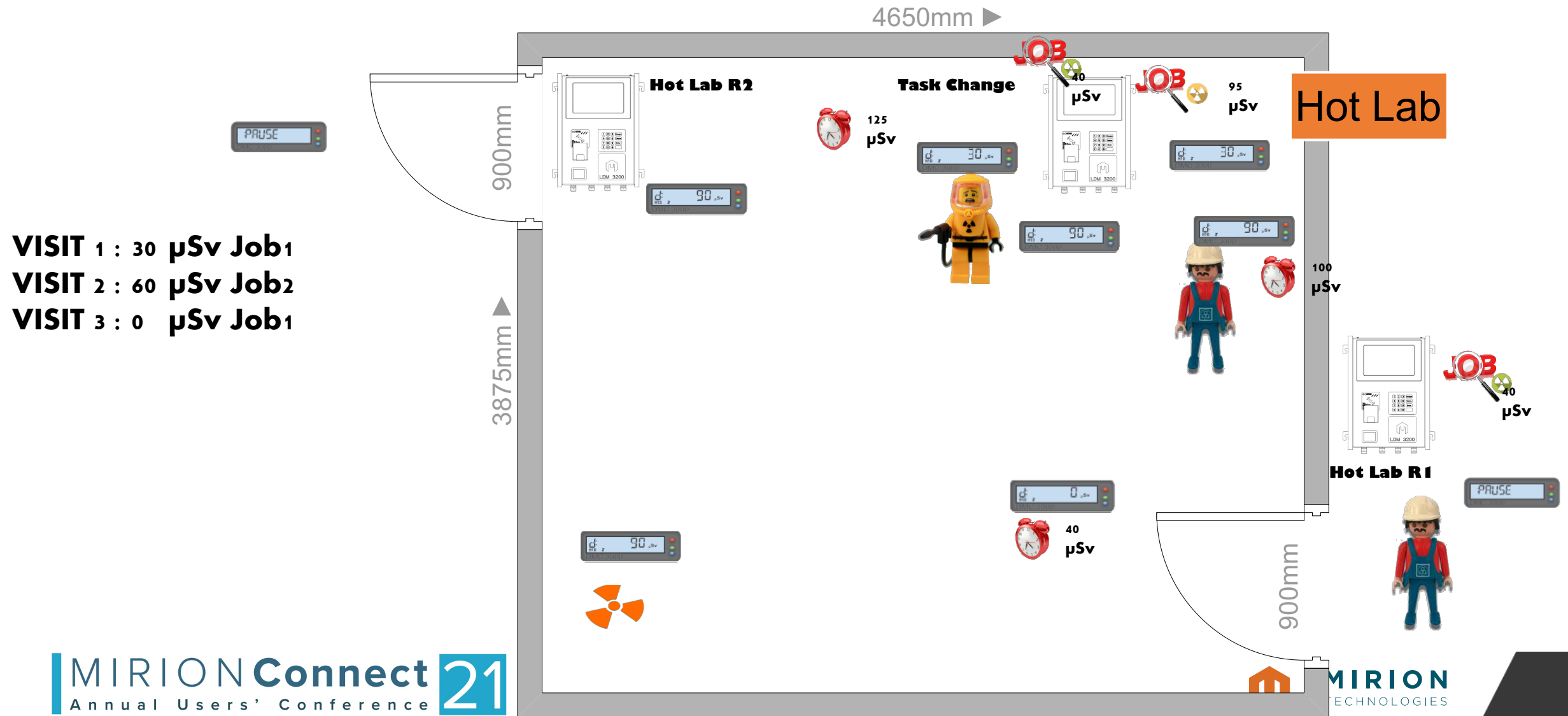
$$100 \mu\text{Sv} = 90 [1] + [40(2) - 30 [3]]$$

- (1) **Dose on the dosimeter**
- (2) **Job alarm**
- (3) **Already received on that job since entry**

Dose alarm calculation Smart mode



Dose alarm calculation Smart mode



Dose alarm calculation Smart mode

Worker dose credit get **priority** on alarm values from the Job



Pre alarms choice based on the same concept

(i.e. In the past pre alarm was a % of the final chosen alarm)

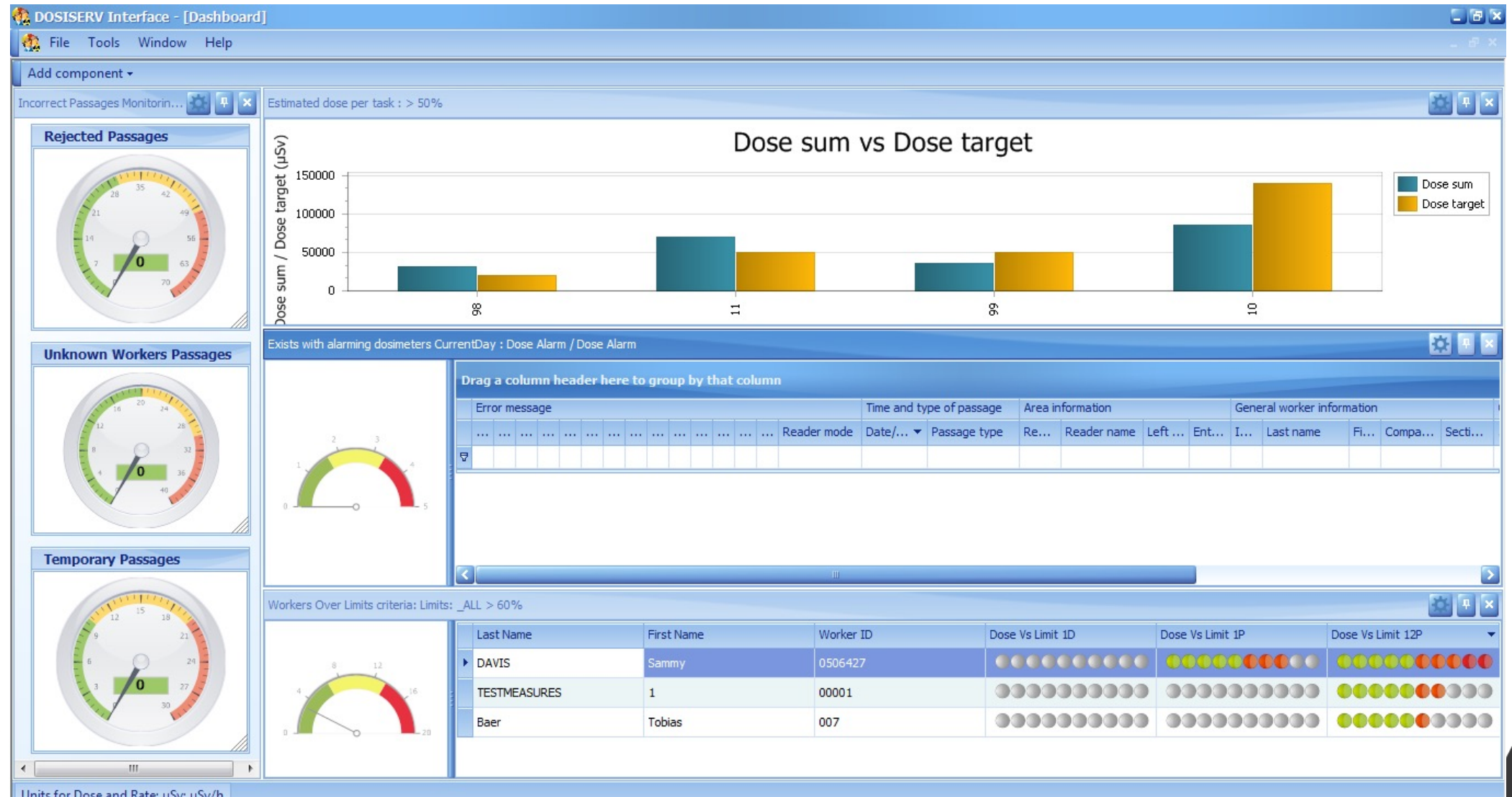
Now pre alarm from worker and pre alarm from the job get calculated separately and chosen



No worries, DosiServ can help you

Drag a column header here to group by that column																								
Error message							Time and type of passage			Area information			General worker information				Other passage information		HP10G dose and dose rate				Duration	
...	Reader mode	Date/Time	Passage type	Re...	Reader name	Left ...	I...	Last name	Fi...	Compa...	Secti...	Task No.	Task name	Dose alarm...	Dose warni...	HP10G...	HP10G...	Duration
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Features Dashboard



Questions

