

# BS 5839-1 – What has Changed?

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# When?

DPC Closed  
01/02/2017

BSI Panel  
resolve  
comments

Publication  
August 2017

# Overview



- There are 25 changes to 14 clauses:
- Delete Informative Annex F – VAD characteristics (CoP001)
- New Informative Annex E – Selection of detectors
- New Normative references:
  - BS 8591, CoP Remote ARC
  - EN 54-21, Alarm transmission and fault warning routing equipment
  - EN 54-29, Smoke and heat multi-sensor
  - EN 54-30, CO and heat multi-sensor

# New Definitions

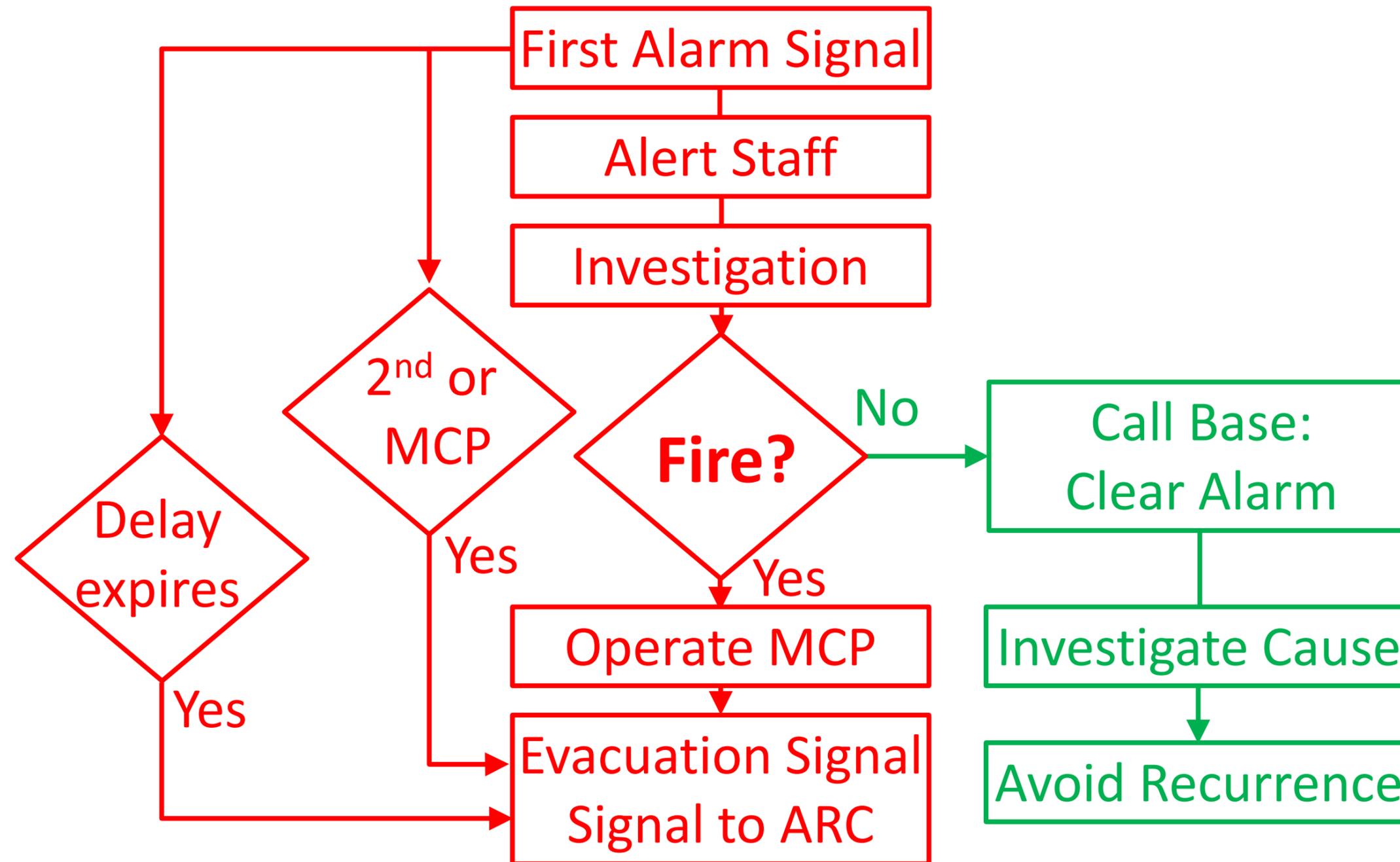


- 3.14 Critical signal path
  - Includes signal paths to alarm transmission equipment
- 3.62 Unwanted fire alarm signal
  - False alarm from CIE passed to F&RS

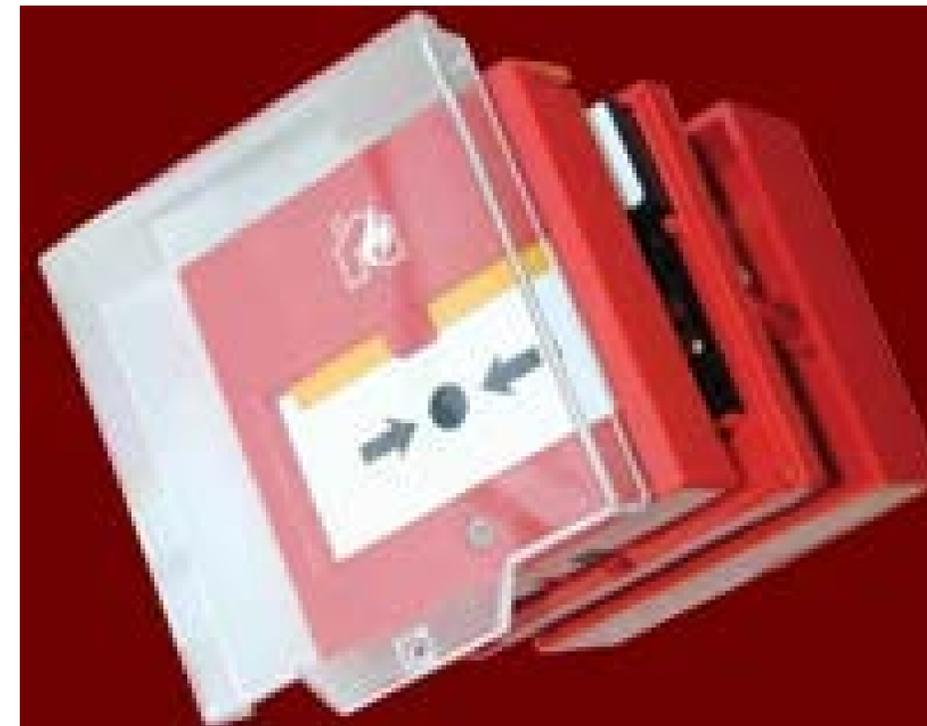
# Multi-sensors in escape routes

- Multi-sensors that have fire sensitivity of BS EN 54-7 are now acknowledged as suitable for fire escape routes
- Configuration must include smoke detector mode

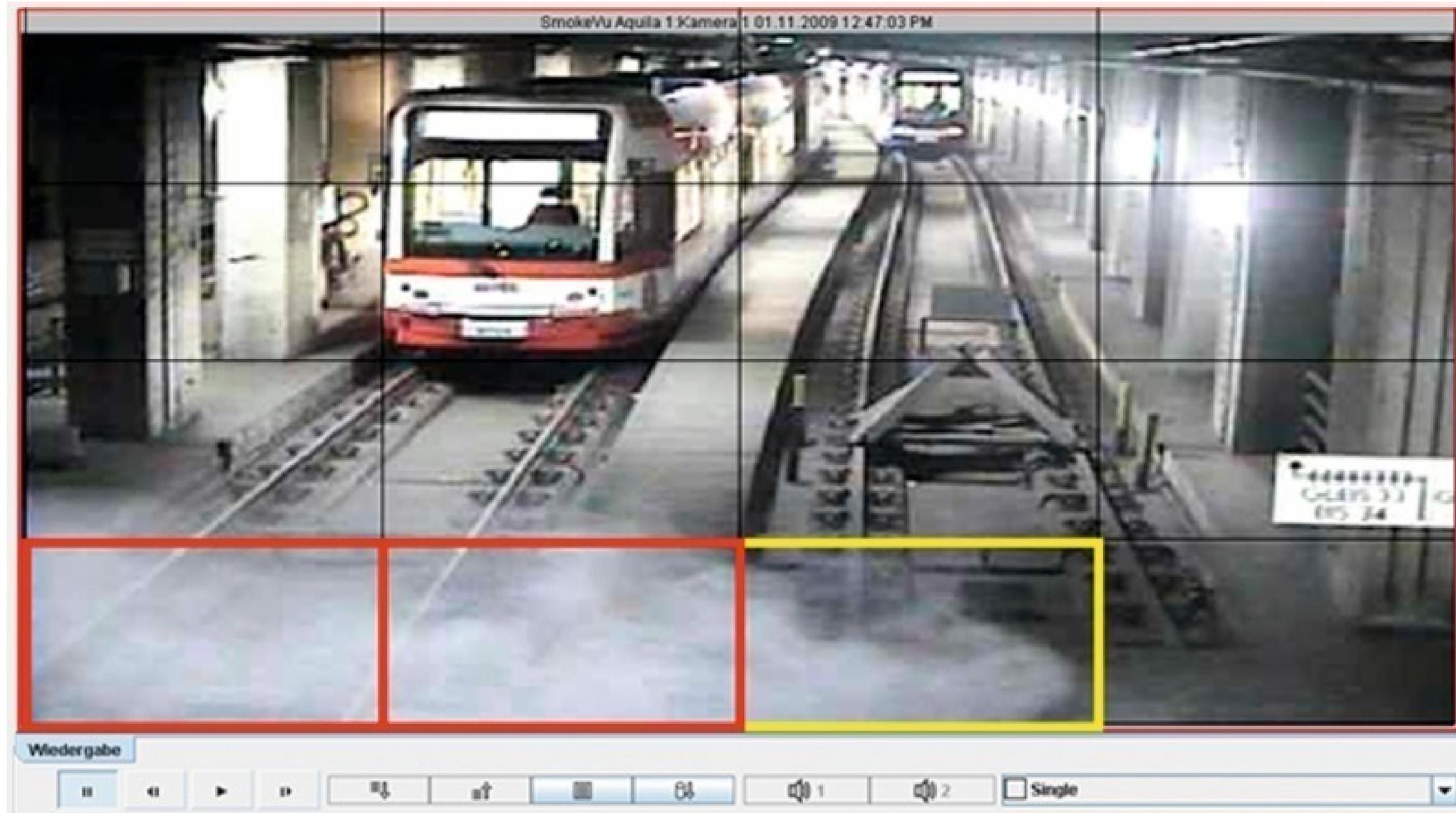
# Staff Alarms



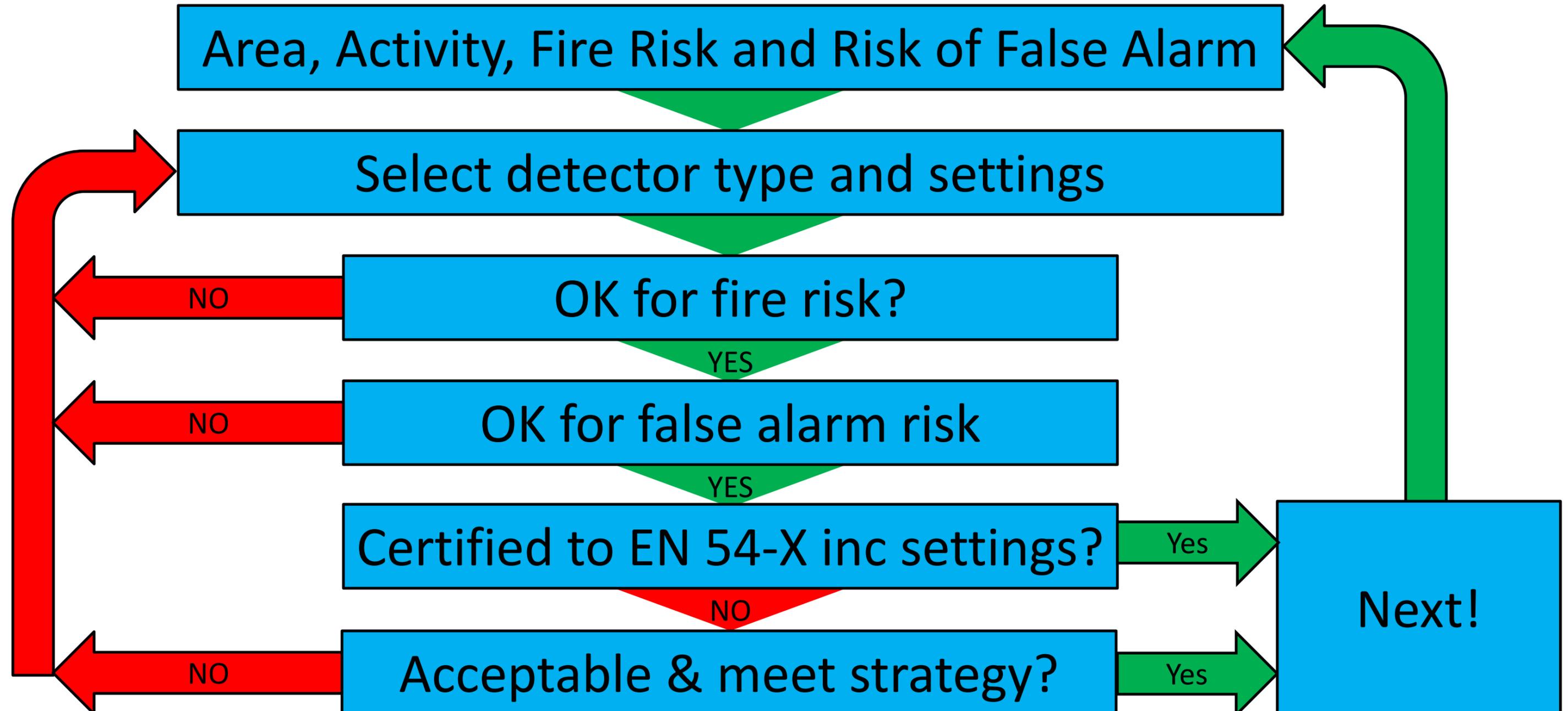
# Use MCP Covers



# Video Fire Detection



# Detector selection & application verification



# Table E.2 Example Fire Risks



Fire Hazard	Example Fire	Ionization	Optical	CO	Heat	Flame	Optical - Heat	Optical - Heat - CO
White smoke	Smoulder electrical	**	*****	*	*	*	*****	*****
White smoke	Smoulder wood	***	*****	****	*	*	*****	*****
Dark smoke	Smoulder furnishing	**	****	*****	*	*	****	*****
Smoulder > flame	Waste paper bin	****	****	**	**	***	****	****
Flaming clean	Burning solvents	*	*	*	***	*****	***	****
Flaming dirty	Burning oils	**	***	**	***	*****	****	****

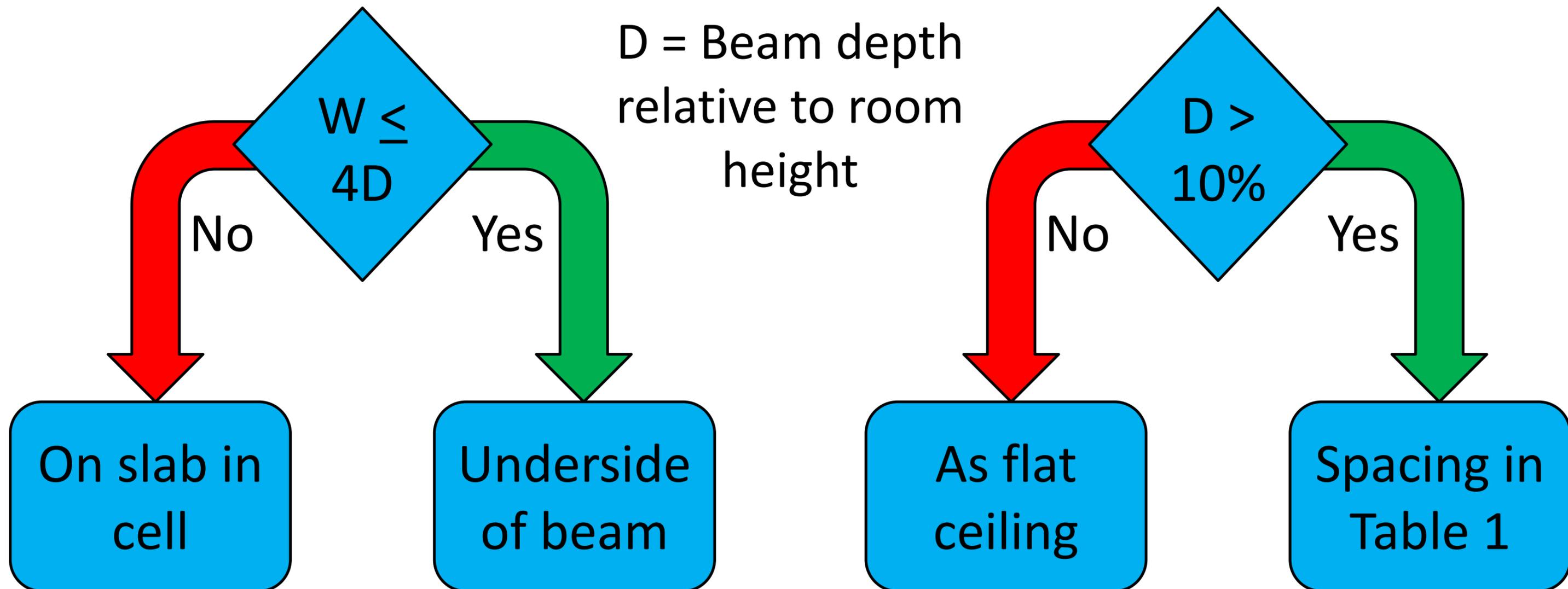
# Table E.3 Avoiding False Alarms



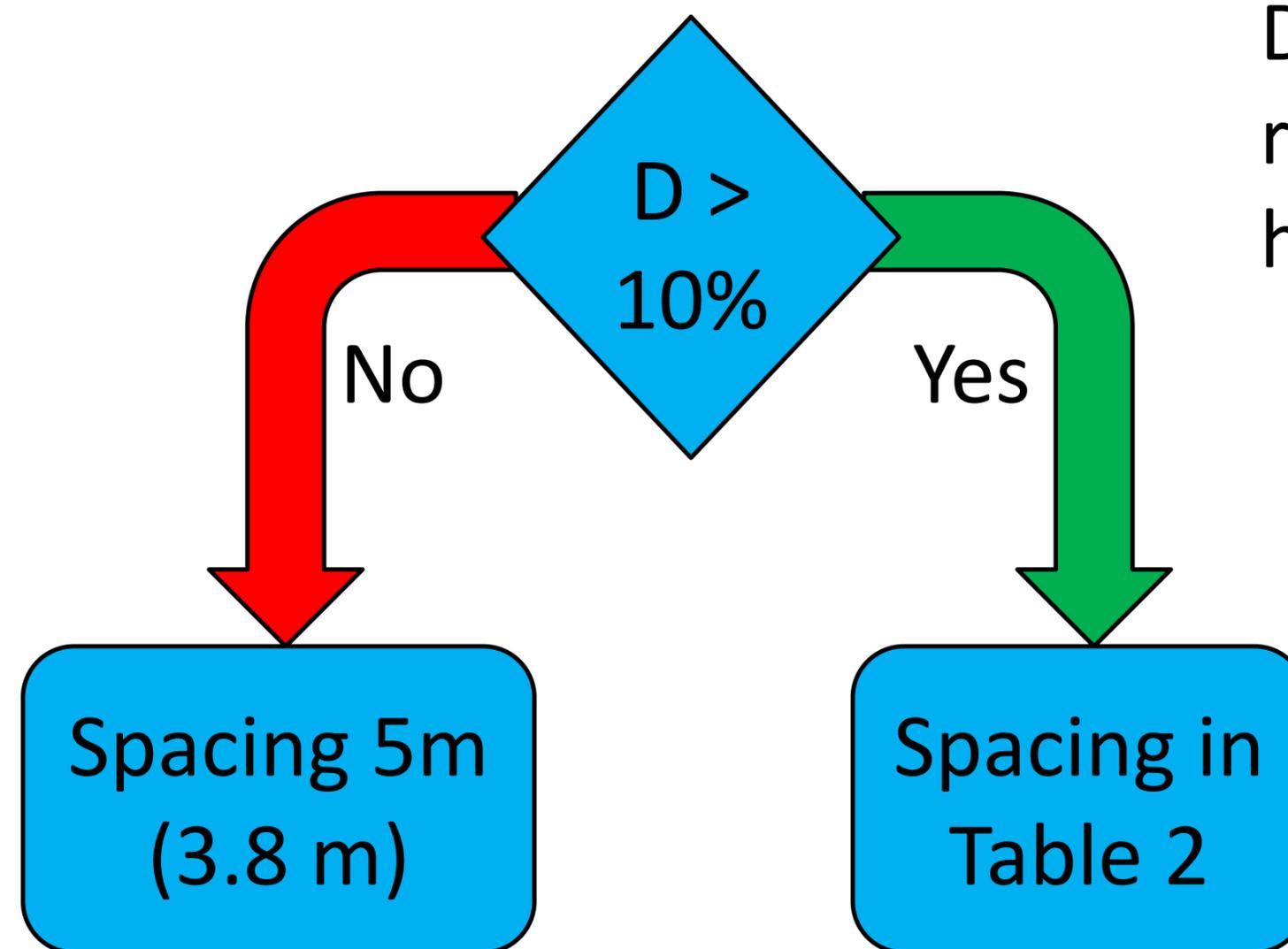
Phenomena	False alarm	Ionization	Optical	CO	Heat	Flame	Optical - Heat	Optical - Heat - CO
Steam	Shower	****	**	*****	*****	*****	***	***
Smoke	Kitchen	*	***	****	*****	*****	***	****
Dust	Warehouse	***	**	*****	*****	*****	***	***
Other	Aerosol	*	*	*****	*****	*****	***	****
High air flow	Air Condition	**	*****	*****	*****	*****	*****	*****
Thermal change	Opening ovens	**	*****	*****	*	*****	****	****

# Detector spacing & siting on honeycomb ceilings

W = Width of cell  
D = Beam depth relative to room height



# Detector spacing & siting on ceiling with beams



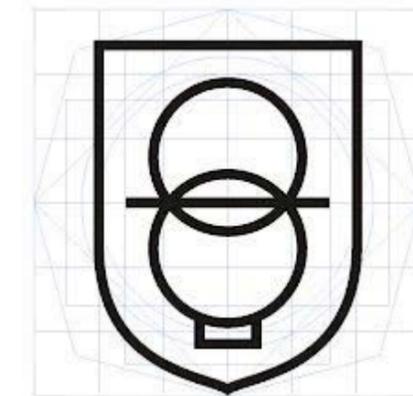
D = Beam depth  
relative to room  
height

# Ceiling Height

- Optical beam detectors used  $> 600$  mm below ceiling  
Supplementary or physical & practical restraints
- Detection at the top of a lift shaft or flue-like structure –  
Recommendations for limits of ceiling height in 22.9 and  
Table 3 do not apply

# CIE & Electrical Safety

- BS 5839-6 recommends 72 h standby for Grade A
- Double pole isolation no longer recommended
- Recommendations for fire resistant cables clarified
- Electrical safety changed to electrical earthing – Most commentary and recommendation for TX marking deleted
- Reference to follow safe isolation as described in the Electricity at Work Regulations



# Limitation of False Alarms

- Annex E details procedure for selecting detector type
- Guidance to reduce Unwanted fire signals to F&RS
  - Staff alarms
  - Link day / night to security alarm
  - Deactivate connection to ARC during maintenance

# Documentation & Maintenance



- To include detector selection, application and configuration as determined by the designer
- Battery test sequence clarified
- Test method for multi-sensors clarified
- Testing cause and effect clarified

# Signals to Alarm Receiving Centre



- Equipment certified to EN 54-21
- *Commentary on transmission path characteristics*
- Acknowledgement that signals may be routed via security equipment that does not comply with BS 5839-1  
Variation not needed, but battery capacity should comply
- Consider staff alarms to avoid UWFS  
(Not applicable to residential care homes)

# Signals to Alarm Receiving Centre



- The alarm routing equipment needs to conform to the recommendations clause 25
- If not then dual path signalling should be used

# PD 6669:2017



- Due to be published in July 2017
- Does not conflict with BS EN 50136 or BS EN 50131
- Builds upon the existing BS EN 50136 series for alarm transmission systems by providing additional guidance, such as additional ATS performance categories and actions to be taken when the availability fails to meet the required levels, alongside fitting and installation advice to improve the security and reliability of ATS
- Adds ATS performance categories SP3+ and DP2+

# PD 6669:2017



	SP1	SP2	SP3	SP3+	SP4	SP5	SP6	DP1	DP2	DP2+	DP3	DP4
<b>Primary ATP reporting time</b>	<b>32 days</b>	<b>25 h</b>	<b>30 m</b>	<b>10 m</b>	<b>3 m</b>	<b>90 s</b>	<b>20 s</b>	<b>25 h</b>	<b>30 m</b>	<b>10 m</b>	<b>3 m</b>	<b>90 s</b>
<b>Alternative ATP Maximum period when primary operational</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>0 h</b>	<b>25 h</b>	<b>25 h</b>	<b>25 h</b>	<b>5 h</b>
<b>Alternative ATP maximum period when primary failed</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>Op</b>	<b>25 h</b>	<b>30 m</b>	<b>10 m</b>	<b>3 m</b>	<b>90 s</b>
<b>Catastrophic failure</b>	<b>32 days</b>	<b>25 h</b>	<b>30 m</b>	<b>10 m</b>	<b>3 m</b>	<b>90 s</b>	<b>20 s</b>	<b>25 h</b>	<b>31 m</b>	<b>11 m</b>	<b>4 m</b>	<b>3 m</b>
<b>ATS reporting time<sup>a)</sup></b>	<b>32 days</b>	<b>25 h</b>	<b>30 m</b>	<b>10 m</b>	<b>3 m</b>	<b>90 s</b>	<b>20 s</b>	<b>50 h</b>	<b>60 m</b>	<b>20 m</b>	<b>6 m</b>	<b>3 m</b>

a) Where an ATS includes more than two ATPs, the ATS reporting time should meet the requirements of this table.

NOTE Op = Optional.

**Thank you for your attention**

**Any questions?**

