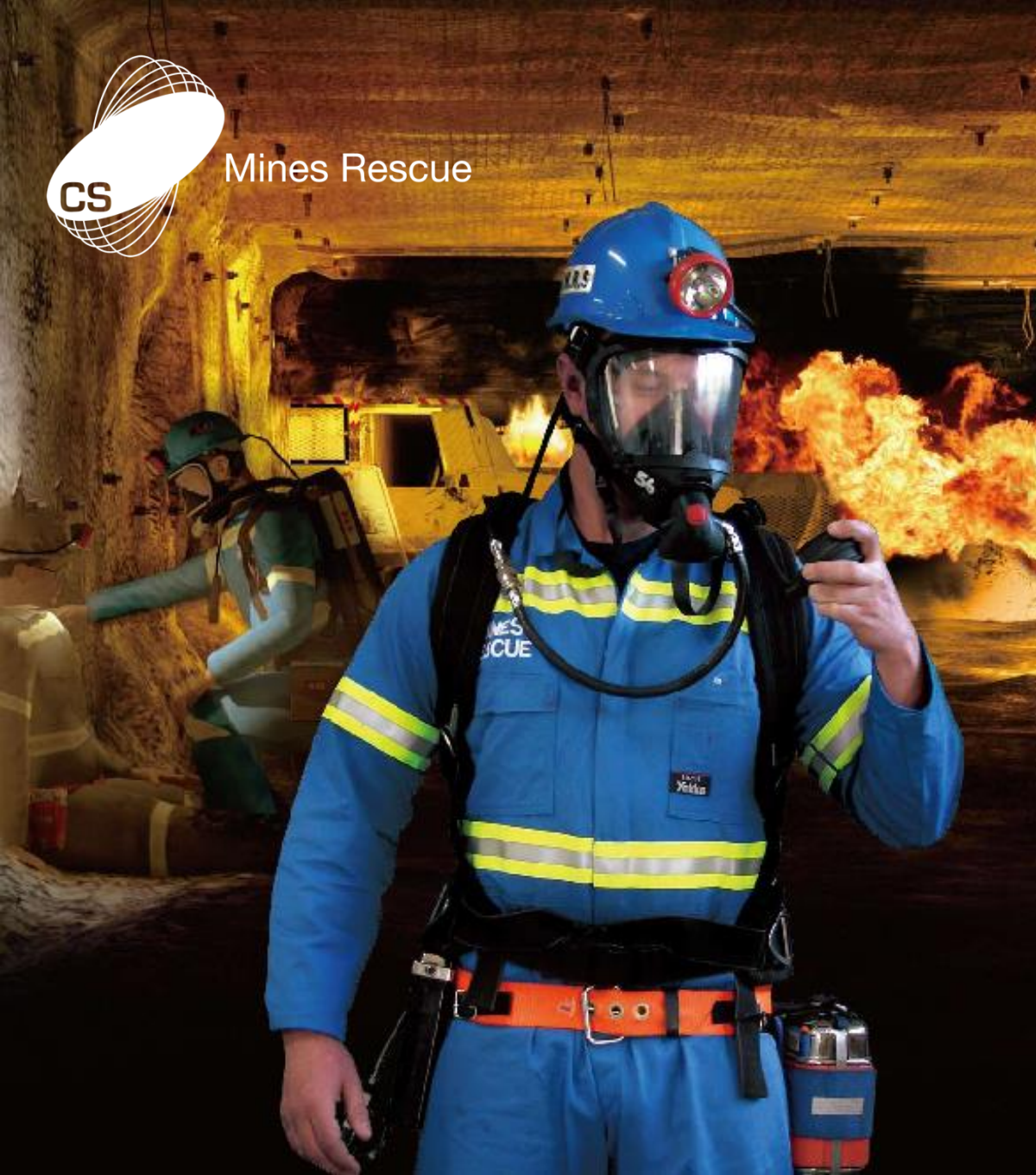




Mines Rescue



Effective Mines Rescue Training

Integrating Virtual Reality

Presented by Stephen Tonegato
State Operations Manager
Mines Rescue NSW

Mines Rescue, NSW



SINGLETON



NEWCASTLE



LITHGOW

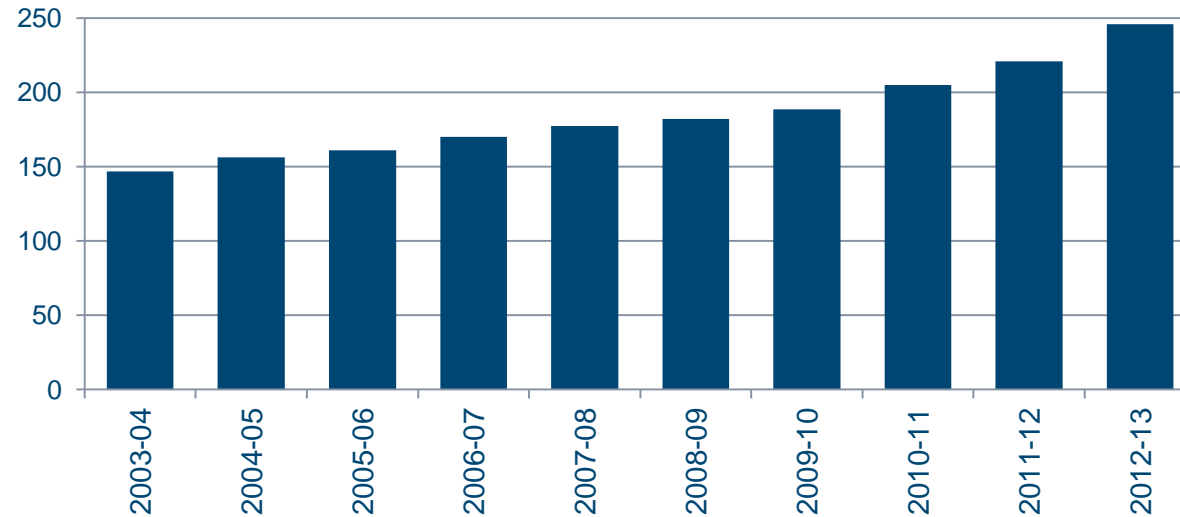


WOLLONGONG

NSW Coal Industry Overview

- 27 Surface Mines
- 28 Underground Mines
- 23,000 employees

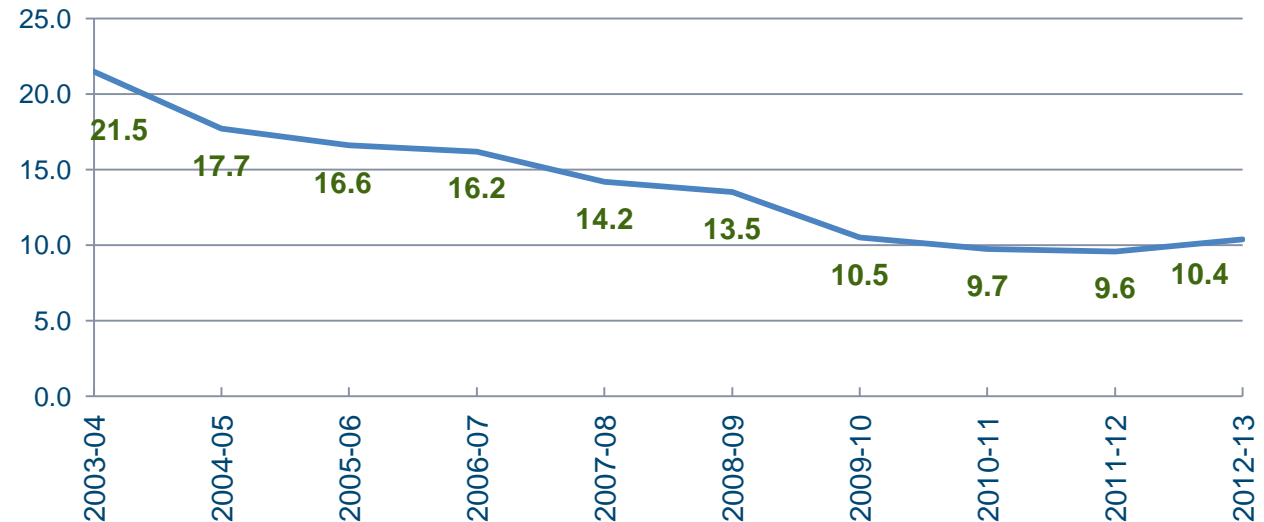
Raw coal production total (per million tonnes)



Production

Lost-time injuries (per million hours worked)

Safety



Mines Rescue Training

Mines Rescue is a Registered Training Organisation

- Registered with Australian Government to deliver Nationally accredited and recognised training.
- Must meet Australian Quality Skills Authority nationally approved quality standards.
- Significant scope of accredited courses (Vertical Rescue, Workplace Training and Assessment, Safe Entry and Work in Confined Space, Mining Diploma, etc.).



Mines Rescue Structure

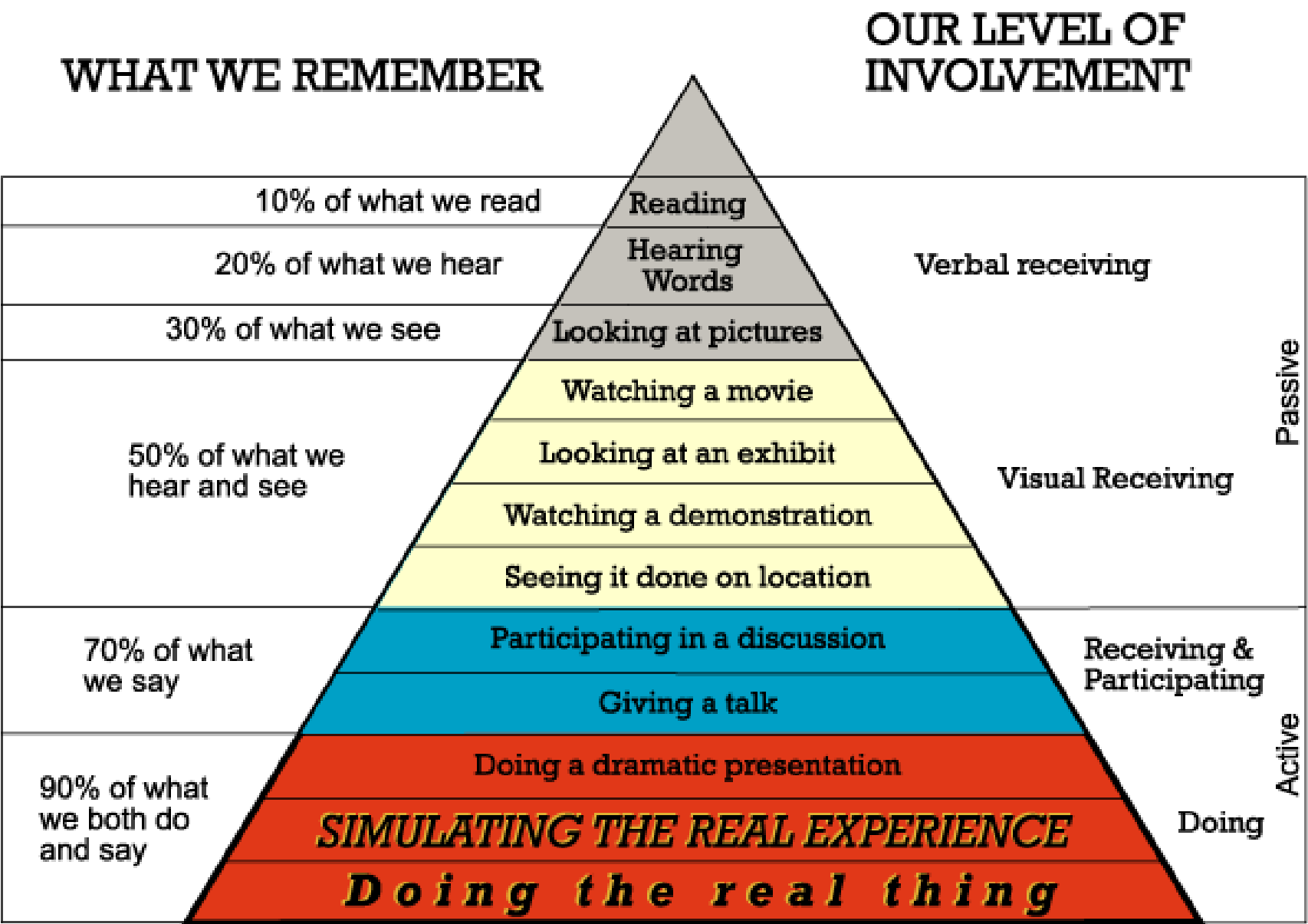


**Four
Rescue
Stations**

56 staff

**28 U/G Mines
550 Volunteers**

Edgar Dale's Cone of Experience

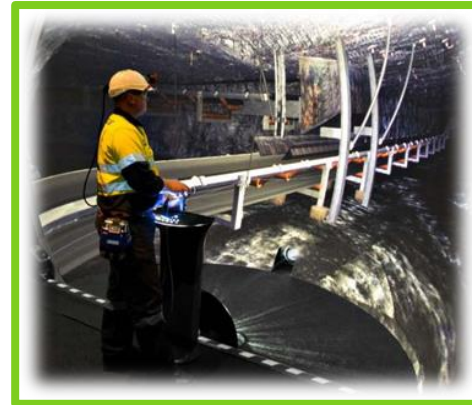


Training Philosophy

‘Benjamin Franklin’



***Tell me ..
and I may forget,***



***Show me ..
and I may remember***

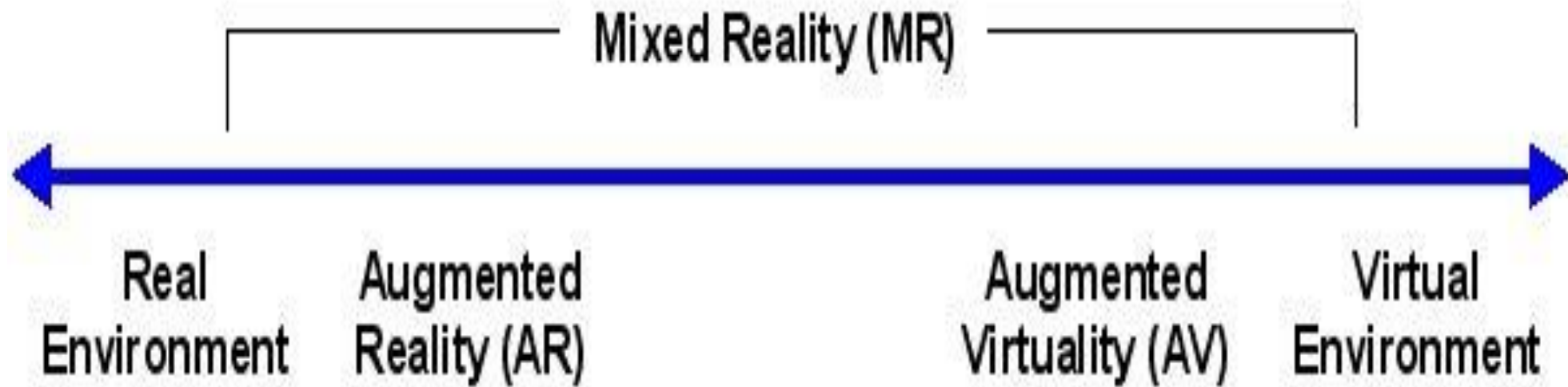


***Involve me..
and I will understand***



Mines Rescue

Virtual Reality Training - image courtesy of "Wikipedia"



Virtual Reality Theatres

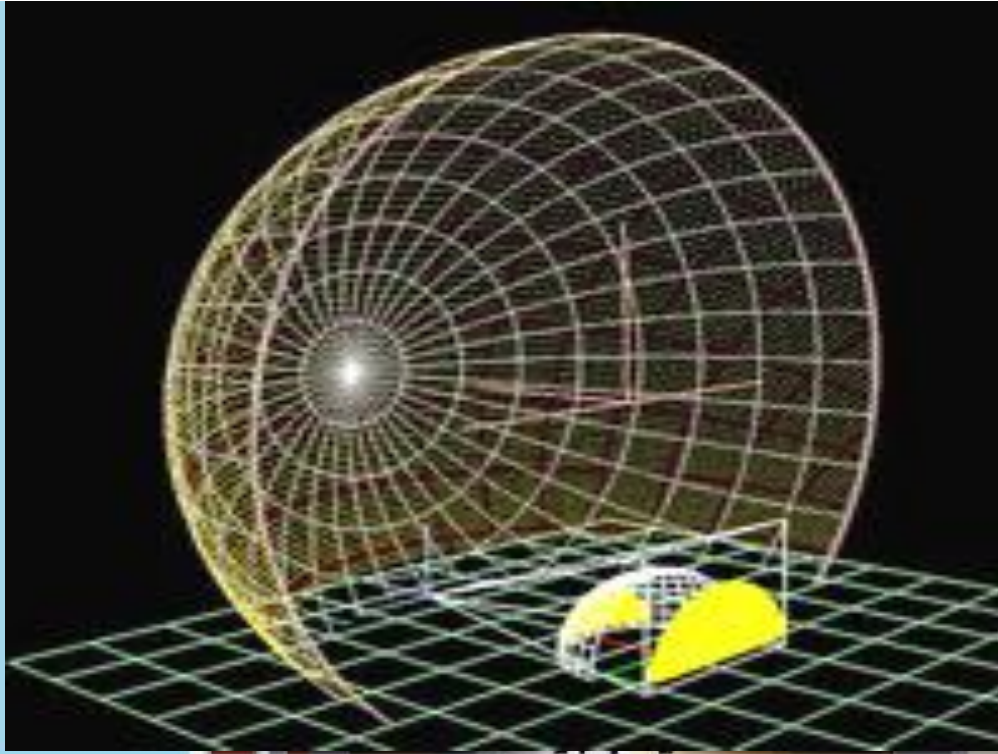
VIRTUAL REALITY
360 DEGREE SCREEN

MIRROR DOME
SCREENS

VIRTUAL REALITY
120 DEGREE SCREEN



Virtual Reality Theatres



MIRROR DOME
SCREENS



Virtual Reality Theatres



VIRTUAL REALITY
120 DEGREE SCREEN



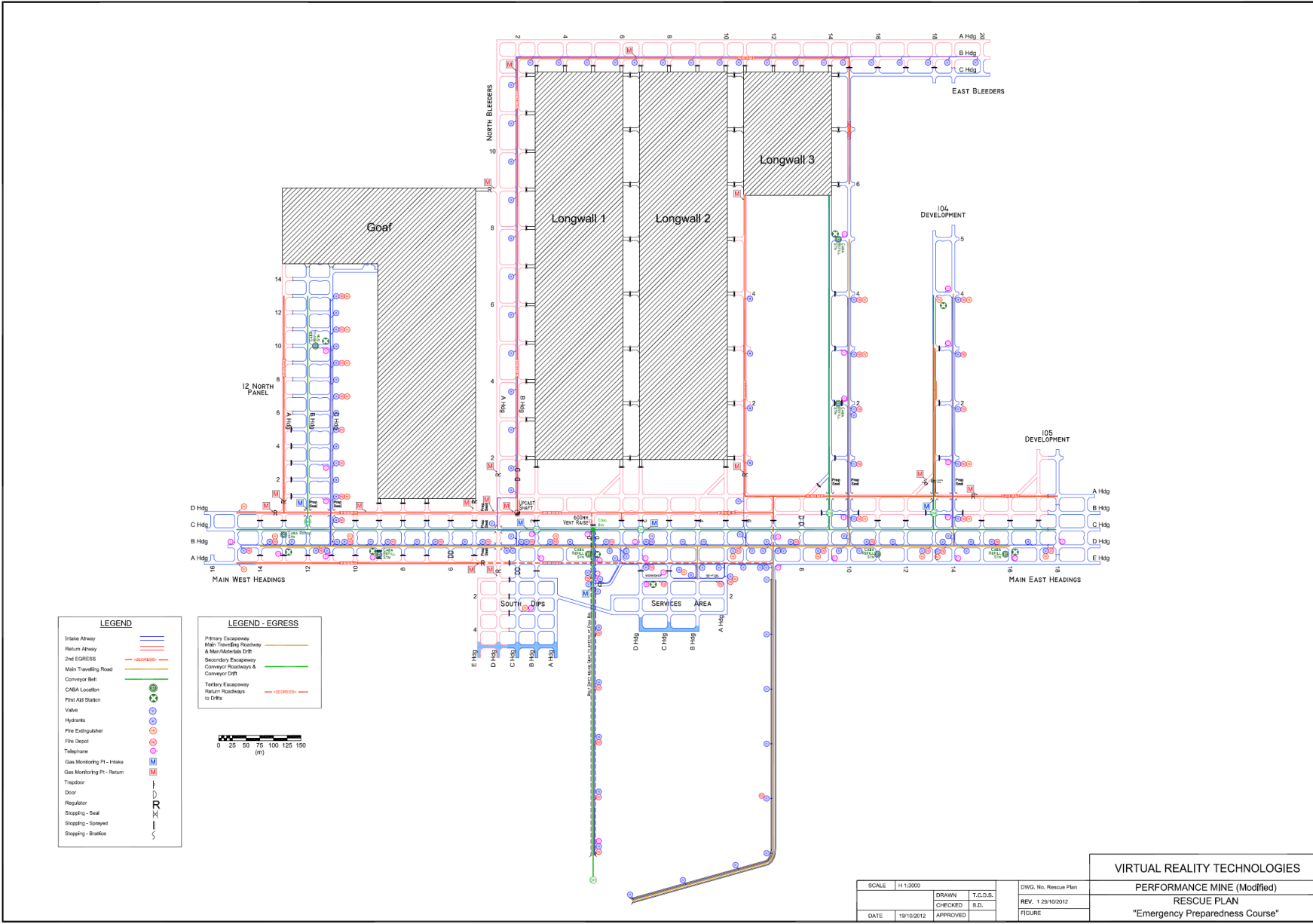
Virtual Reality Theatres

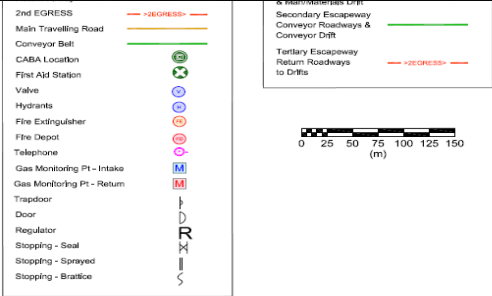
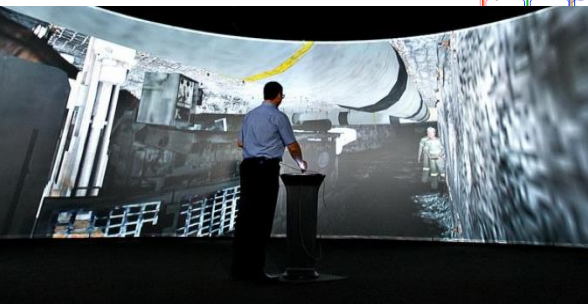
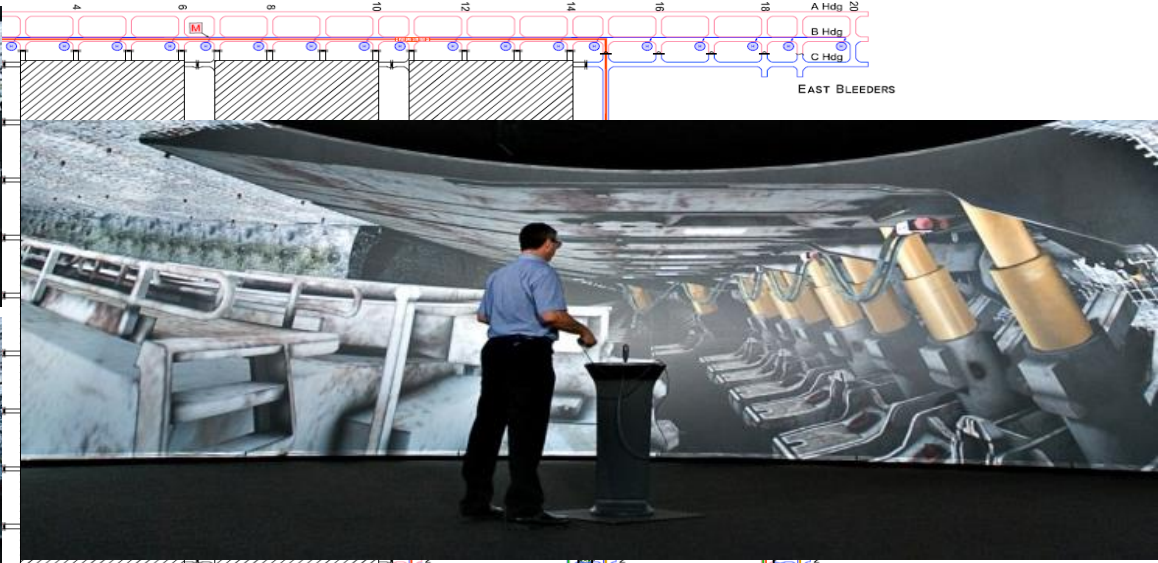
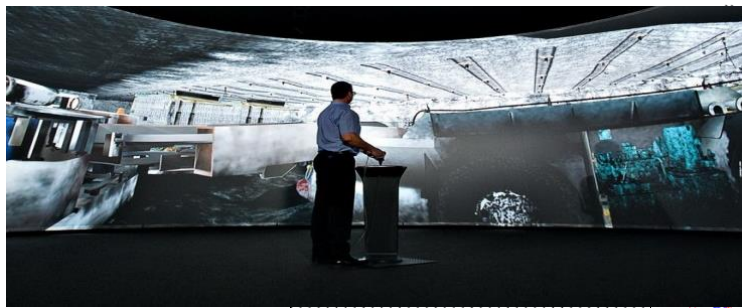
VIRTUAL REALITY
360 DEGREE SCREEN



Performance Mine

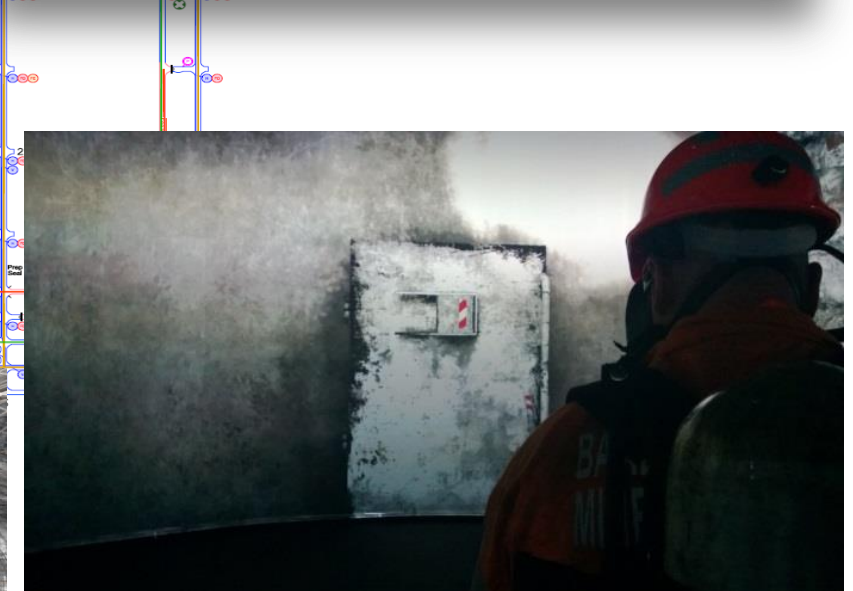
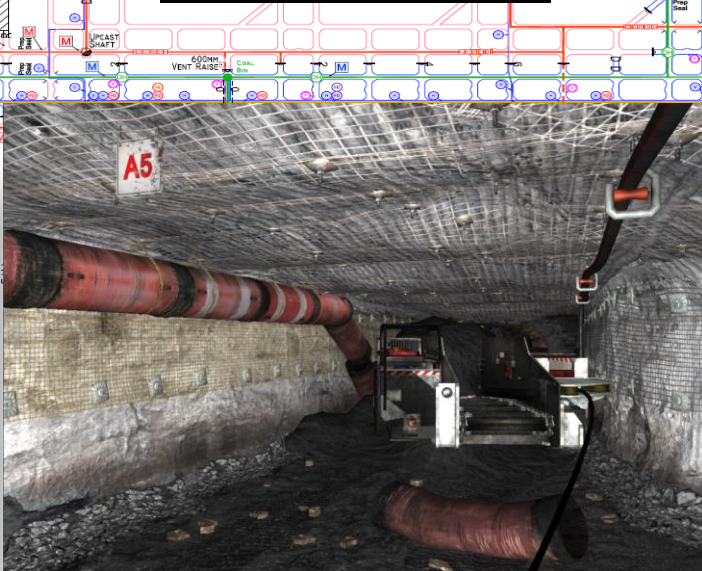
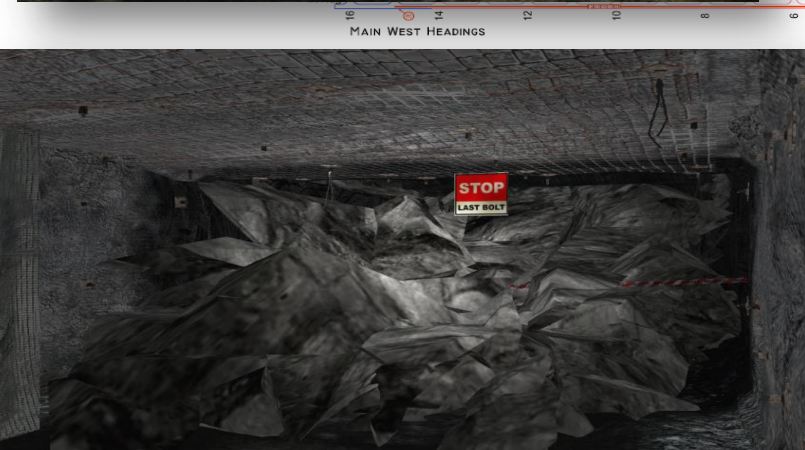
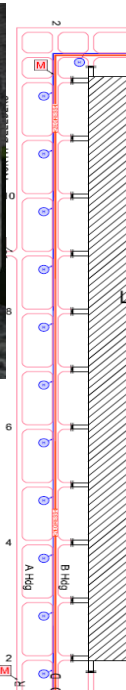
Real Time Operational Modern Underground Coal Mine





SCALE	H 1:3000	DRAWN	T.C.D.S.	DWG. No. Rescue Plan
CHECKED		APPROVED	B.D.	REV. 1 28/10/2012
DATE	19/10/2012			FIGURE

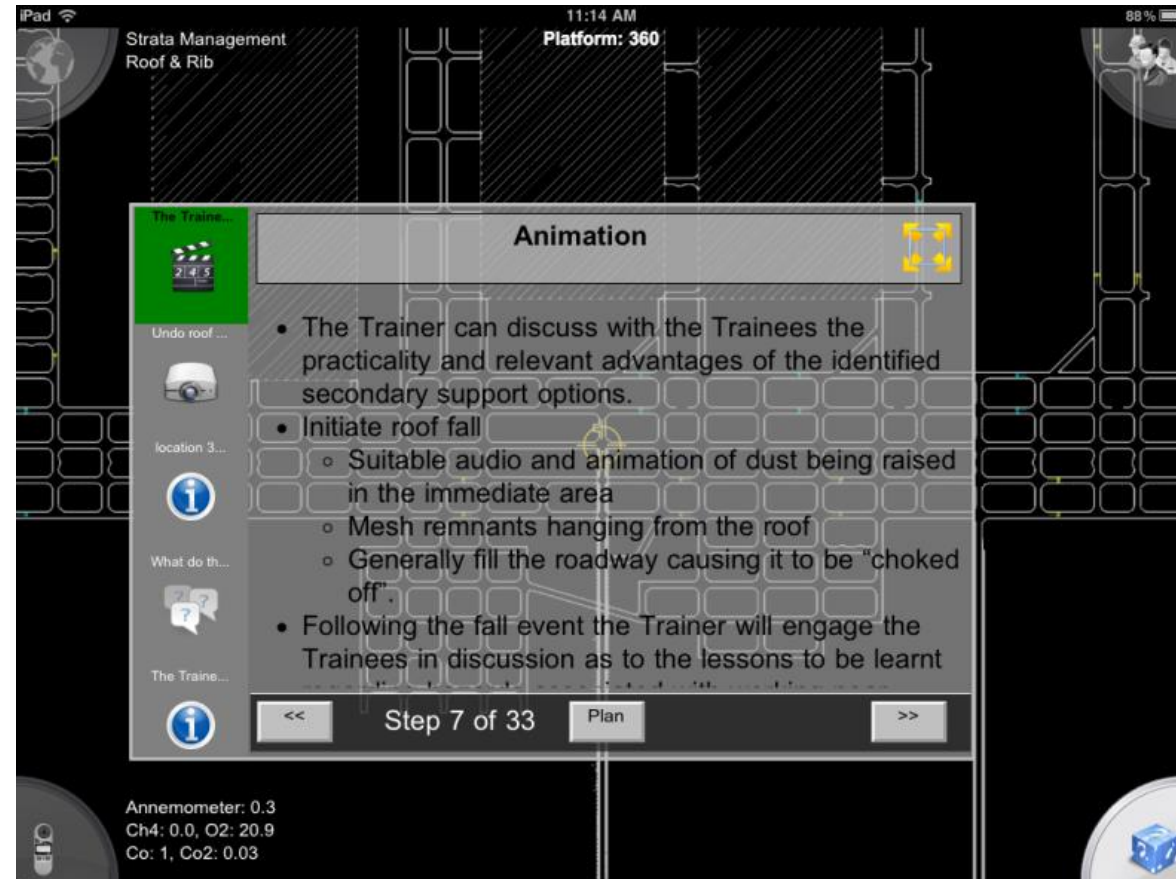
VIRTUAL REALITY TECHNOLOGIES
PERFORMANCE MINE (Modified)
RESCUE PLAN
"Emergency Preparedness Course"



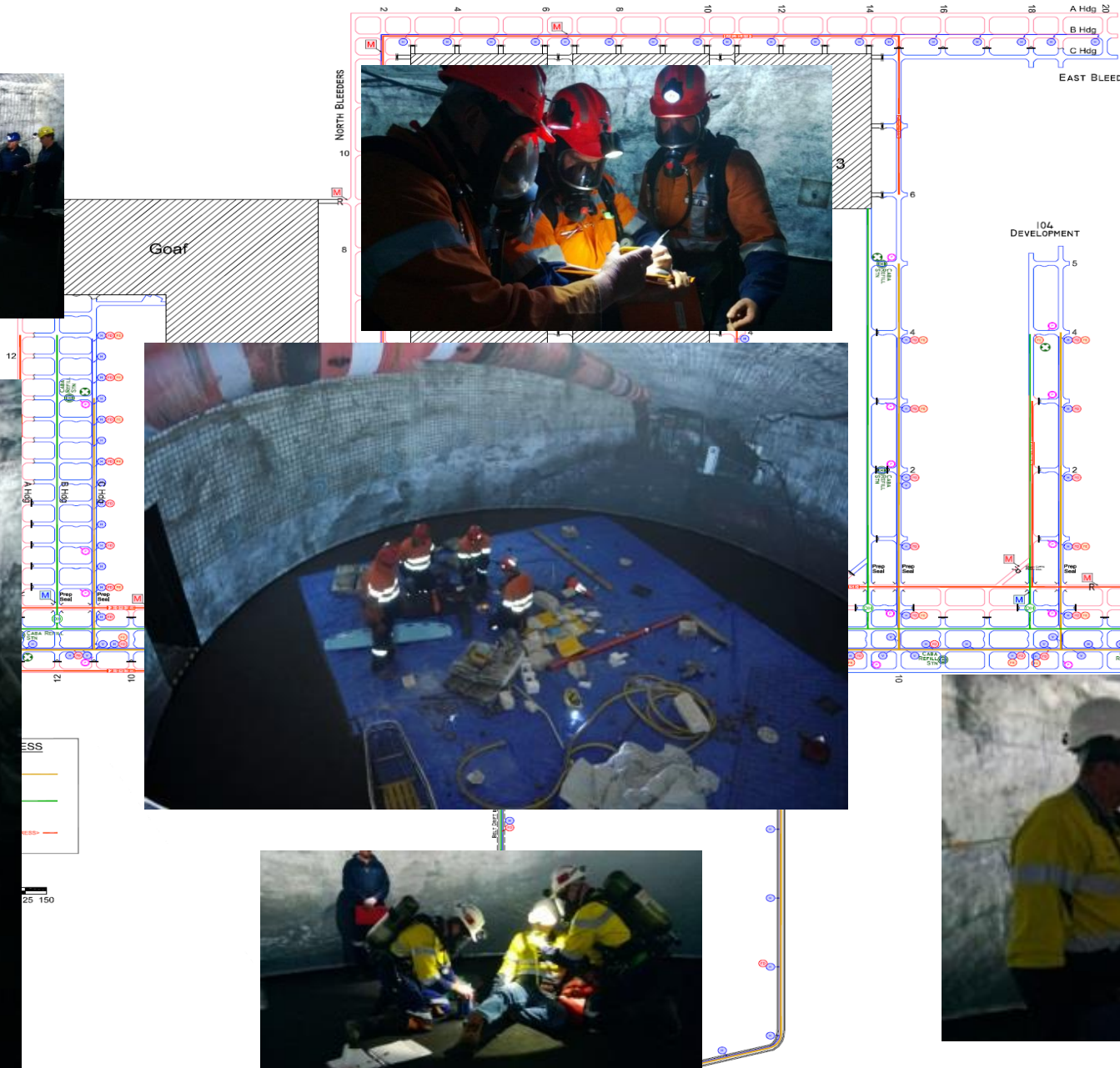
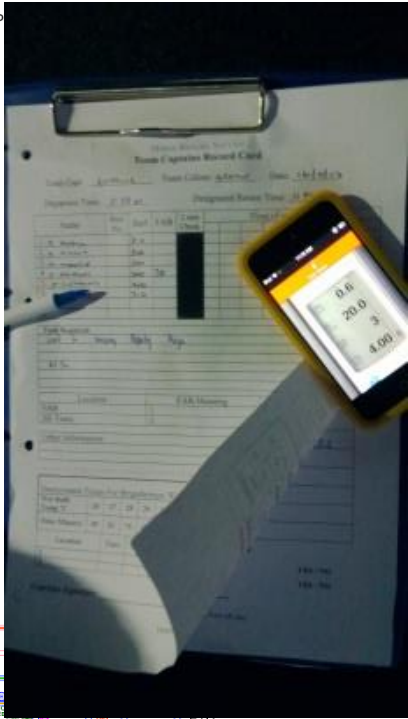
SCALE	H 1:3000	DRAWN	T.C.D.S.	DWG. No.	Rescue Plan
CHECKED	B.D.	REV.	1 28/10/2012		
DATE	19/10/2012	APPROVED		FIGURE	

VIRTUAL REALITY TECHNOLOGIES
PERFORMANCE MINE (Modified)
RESCUE PLAN
"Emergency Preparedness Course"

Trainers Control Tool – 'ROCKWare'



Rugged Operating Console (ROCK)



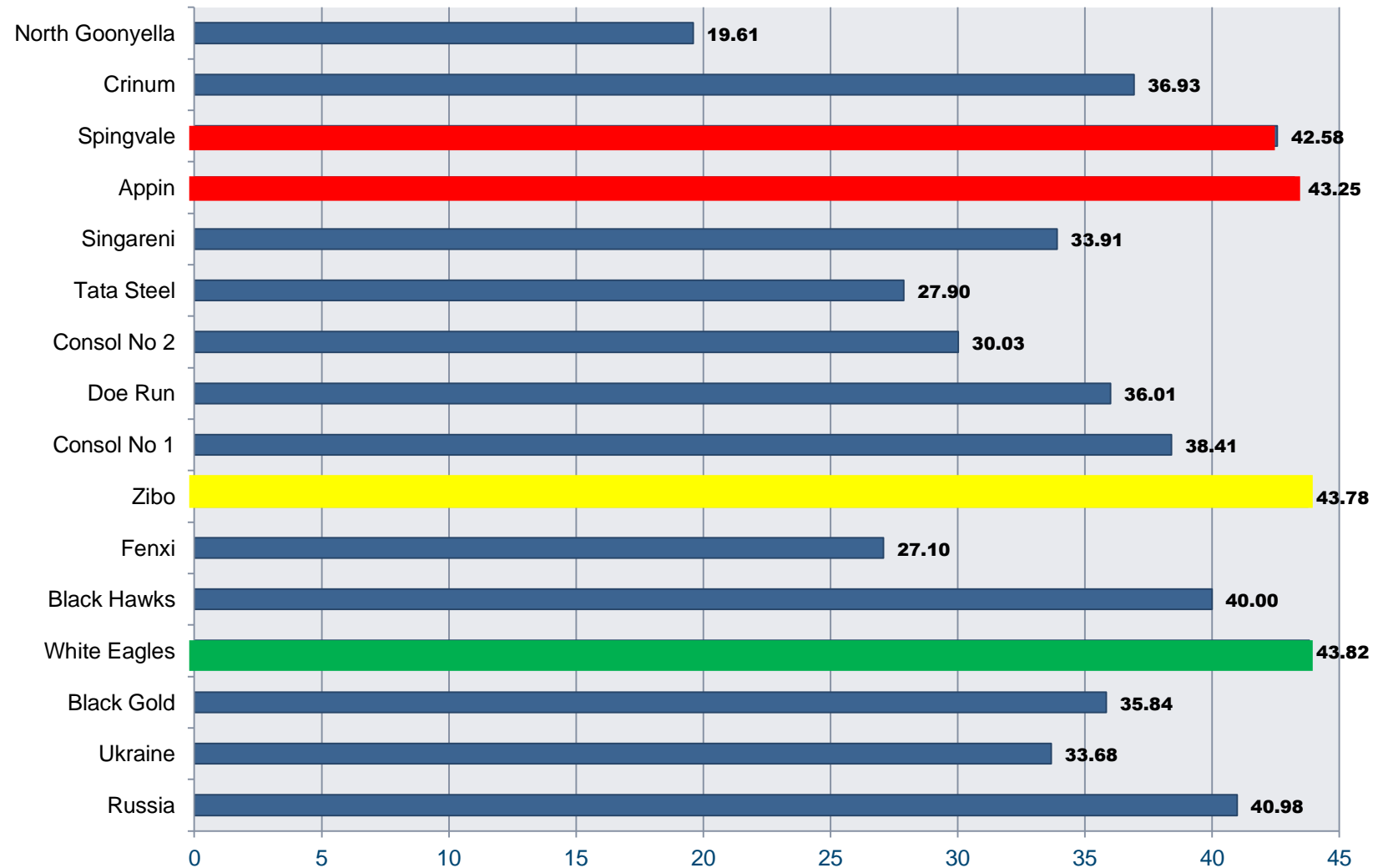
SCALE				DRAWN				DWG. No. Rescue Plan				VIRTUAL REALITY TECHNOLOGIES			
H 1:3000				T.C.D.S.				PERFORMANCE MINE (Modified)				RESCUE PLAN			
DATE				CHECKED				REV. 1 28/10/2012				"Emergency Preparedness Course"			
19/10/2012				APPROVED				FIGURE							

Short Video



Effectiveness

International Mines Rescue Competition 2010 Virtual Reality Exercise



Mixed Reality

Mixed reality

- Virtual environment interacting with physical objects.
- Engages and stimulates both physical and mental senses.
- 'Doing the Real Thing'

**= EFFECTIVE
TRAINING**



Examples of Virtual Reality Software Capabilities

<http://www.youtube.com/watch?v=IVuosTgc1pk>



Mines Rescue