- sending the text messages (emergency alarms) to selected or a group of selected tags,
- resistance to interference from other radio equipment (eg. Access points WiFi),
- giving the emergency alarm by the supervised persons to the mine dispatcher,
- self-diagnostic system devices and data networks,
- multi-level data archiving, generating reports and statistics based on the data collecte,
- bilancing the number of employees entering / leaving the monitored zones to ensure the proper migration of humans,
- alarms for employee detour, too long time of remaing in the specified zone, too many people in a given area, etc.,
- intuitive visualization software made in the technology WEB,
- searching people within the system range with their exact location.

#### Awards winner:



MTK Trade Fair medal in 2011, 2013



"Napedy i Sterowanie" Journal Product of the Year 2012

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HUMAN MONITORING AND TRACKING SYSTEM

# ATUT - LOCATION



ATUT-Location System was established primarily with the aim of increasing the safety of persons employed in mine plants. ATUT-Location is dedicated for constant monitoring of workers located underground in different parts of the mine plant. System functionalites are mostly dedicated for:

- •mine dispatchers who are about to monitor the mine plant situation prevailing in the cooridors of the plant,
- safety related mine departments supervising the safety of the work / service

• ventilation department providing information on the number of employees residing in each of the mine parts, critical from the point of view of the air circulation in monitored zones and mining excavations works.

•In addition, system can be used as a source of information on the currently allocated human resources, the technological work carried out by providing location data along with the identification of the employee who is looked for, in terms of qualifications and / or group / division to which they belong. The main features of the system includes: modular design,

- high precision of location, up to 1.5 m. in underground excavations,
- determination of the position of localized man (object) in several dimensions (OD, 1D or 2D),



AT-LBS-1 ATUT - Location system base station System access and base station which allows to determine the AT-LTAG-1 location



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# PZW-1/ATVisio-2

# Surface visualization unit with ATVisio2 software platform

Manufacturing Execution System developed to support dispatcher operations providing control and safety monitoring, visualization, database (SCADA), voice communication, data network diagnosis

> $\oplus$ Accelerometer sensor - movement detection

> > Wireless system devices configuration



# ATUT - LOCATION HUMAN MONITORING AND TRACKING SYSTEM



ANTi-2G4 Intrinsically safe 2,4GHz antenna Antenna for 2,4GHz band designed to work with AT-LBS-1 human monitoring system base station

争 1,5 m. location accuracy



AT-TEL **Intrinsically safe VoIP telephone** Intrinsically safe VoIP telephone made to wotk with ATUT-MFE network infrastructure



## AT-LTAG-1

### Active localization tag with LCD display

Active identification tag with LCD display (text messaging), wireless battery charging and built-in accelerometer sensor