

ISO/TC 82 Mining

Development & Participation in the ISO Technical Committee to ISO/TC-82: Mining

 THE GEOLOGICAL SOCIETY
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Prepared for:

SESSION NO. 25

Geology, Society, and Policy

Prepared By:

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Chair - US TAG ISO TC-82**

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Discussion Topics

1 Standards & ISO

2 History & Context

3 Next Steps

ISO/TC 82 Mining

Standards & ISO



What are Standards?

- Consensus based
- Designed as a rule, guideline or definition
- Revisable and updateable
- Voluntary
- Standards must fit to purpose:
 - Prescriptive based
 - Objectives based
 - Performance based
 - Principles based
 - Hybrids



Why Standards?

- Because they are not laws...
 - *Standards & regulations can work together*
- Not Mandated
- Typically initiated by industry...
 - *And therefore better received and used by industry because they are part of the process*
- Demonstrate regulatory compliance
- Streamline the regulatory process
- Harmonize across jurisdictions



ISO = A Global System

- *Based in Geneva, Switzerland*
- *163 Countries*
- *97% of the World's population*
- *>100,000 international experts*
- *>600 organizations in liaison*
- *>19,000 International Standards*
- *ANSI = US Member body*



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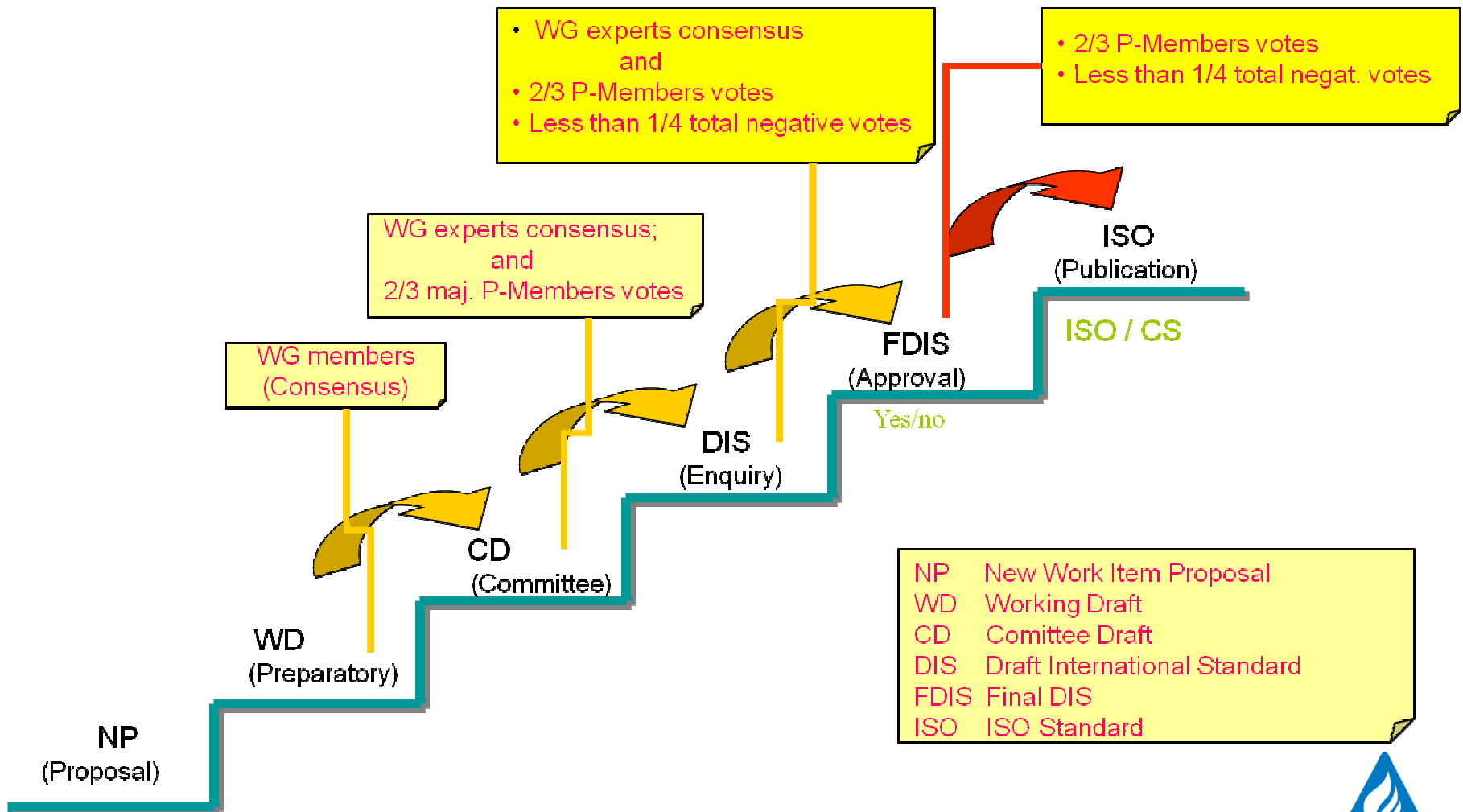
ISO Standards Development

- *ISO does not write standards*
- *ISO does not influence the technical content*
- *Technical Committees (TC) write standards*
- *P-Member countries approve standards*
- *Nations adopt ISO standards*



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ISO Standards Development



- NP New Work Item Proposal
- WD Working Draft
- CD Comittee Draft
- DIS Draft International Standard
- FDIS Final DIS
- ISO ISO Standard



ISO/TC 82 Mining

History & Context



History

- ISO/TC 82 Mining was founded in June 1955
- 2 plenary meetings in 1959 and 1962
- In the following years work has been carried out in the subcommittees
- Since the end of 1990s no activities, until
 - April 2013 in Germany,
 - December 2013 in South Africa, and
 - September 2014 in Seoul, South Korea



Motivation for Re-Activation

- Mining industry is increasing worldwide – by multinationals
- Mining companies & suppliers are engaged worldwide
- Great interest for international standards for the mining industry desired
- SEC, CNI, JORC

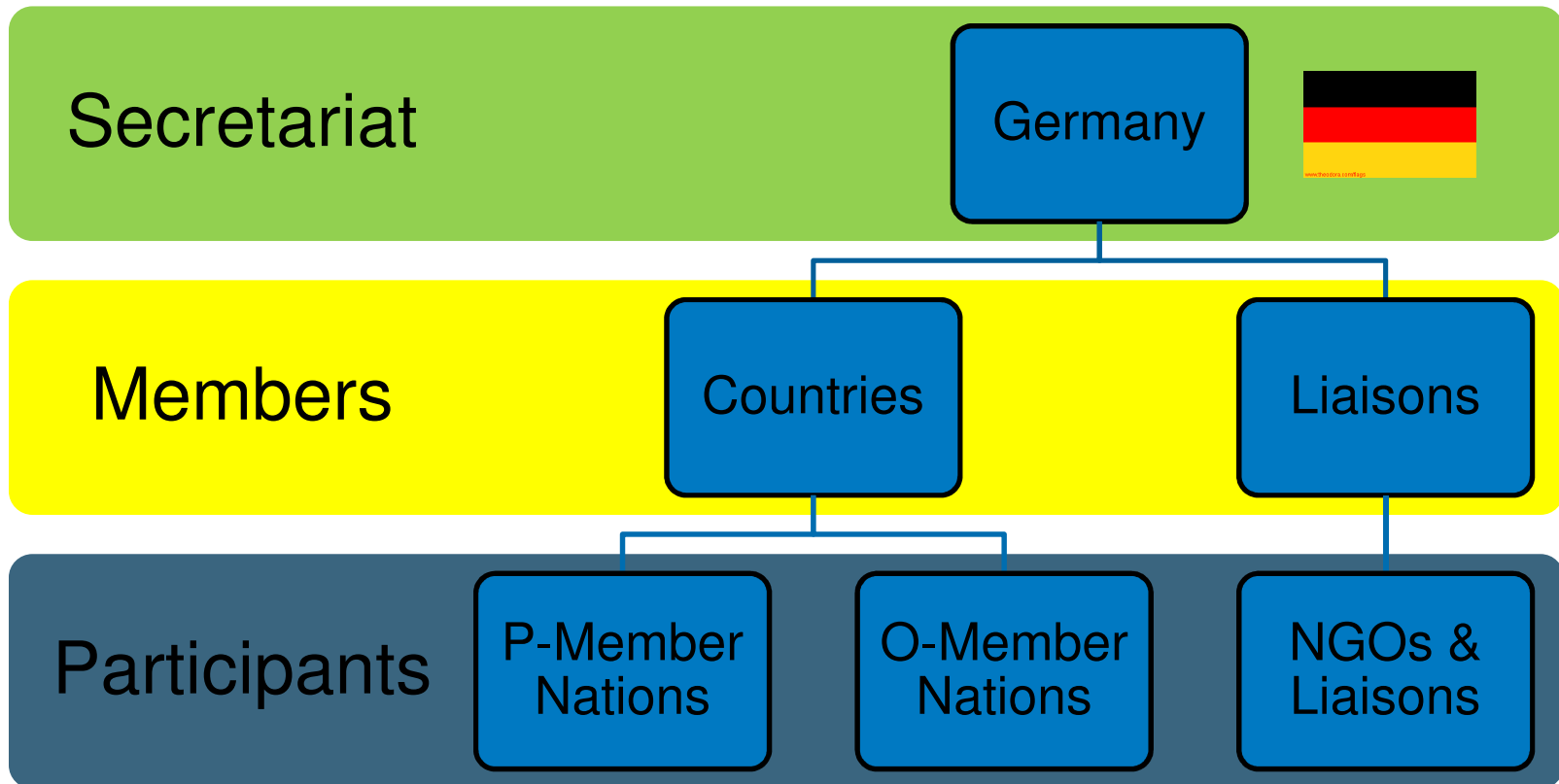


Re-Activation

- Request for re-activation was submitted in October 2012 to ISO Central Secretariat
- Responsible for 36 International Standards
 - Graphical symbols for use on detailed maps, plans and geological cross sections
 - Chain conveyors
 - Wire ropes for mine hoisting
 - Rotary core diamond drilling equipment
 - Rock drilling equipment



ISO TC 82 – CCS Organization



ISO TC 82 – P-Members

18 Participating Countries:

<i>Australia</i>	<i>Korea</i>
<i>Canada</i>	<i>Mongolia</i>
<i>Chile</i>	<i>Russia</i>
<i>China</i>	<i>South Africa</i>
<i>Czech Republic</i>	<i>Spain</i>
<i>Finland</i>	<i>Sweden</i>
<i>France</i>	<i>UK</i>
<i>Germany</i>	<i>USA</i>
<i>Iran</i>	<i>Zambia</i>

- ✓ *Voting Members*
- ✓ *Guaranteed International Expert Participation on all WGs*



ISO TC 82 – O-Members

22 Observing Countries:

<i>Austria</i>	<i>Moldavia</i>
<i>Bulgaria</i>	<i>Pakistan</i>
<i>Croatia</i>	<i>Peru</i>
<i>Cuba</i>	<i>Poland</i>
<i>Ecuador</i>	<i>Romania</i>
<i>Egypt</i>	<i>Serbia</i>
<i>Greece</i>	<i>Tanzania</i>
<i>Hong Kong</i>	<i>Thailand</i>
<i>India</i>	<i>Tunisia</i>
<i>Indonesia</i>	<i>Turkey</i>
<i>Japan</i>	<i>Ukraine</i>

- ✓ *Non-voting Members*
- ✓ *May request International Expert Participation on all WGs*
- ✓ *May upgrade to P-Member at any time*



ISO TC 82 – Liaisons

- *ISO/TC 127 Earth-moving machinery*
- *ISO/TC 195 Building construction machinery and equipment*
- *ISO/TC 211 Geographic information/Geomatics*
- *European Commission*
- *World Customs Organization*

- ✓ *Non-voting Members*
- ✓ *Guaranteed International Expert Participation on all WGs*



US TAG to ISO TC 82



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TC-82 Working Groups

ISO/TC 82/JWG 1: Rock drill rigs



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TC-82 Working Groups

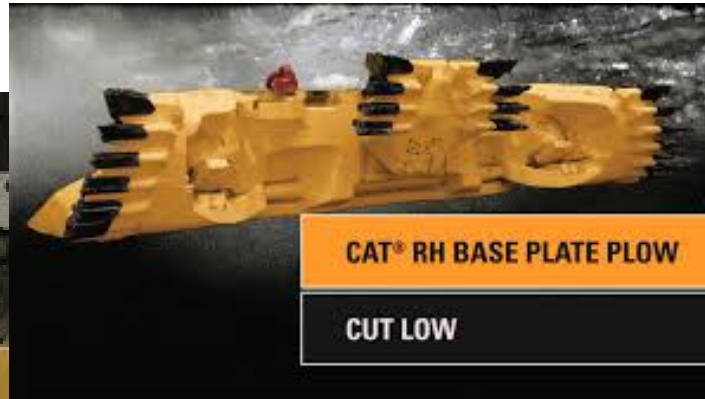
ISO/TC 82/WG 2: Continuous surface miners



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ISO/TC 82/WG 3: Shearer loaders and plough systems



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ISO/TC 82/WG 4: Structures for mine shafts

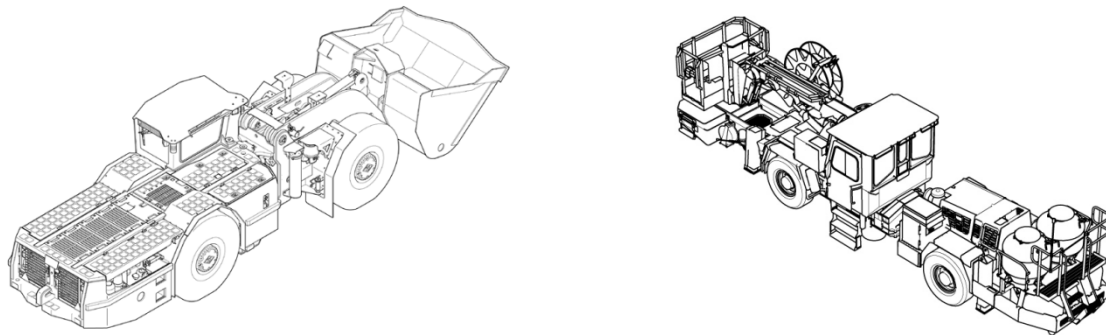
- *No current US experts on this Working Group*



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TC-82 Working Groups

ISO/TC 82/JWG 5: Safety of mining and earthmoving mobile machines working

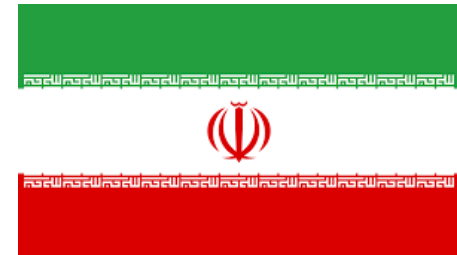


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ISO/TC 82/WG 6: Classification of Mine Accidents

- *US has the preeminent expertise...*
- *...currently has no experts on the Working Group*



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TC-82 Working Groups

ISO/TC 82/SC 7: Mine Reclamation Management

- Canada
- China
- France
- Germany
- Mongolia
- South Africa



TC-82 Working Groups

ISO/TC 82/JWG 7: Autonomous Machine Safety



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Next Steps...



Next Steps...

- US approved & formed TAG (August 2014)
- Determine what expertise the US is willing to put forth and what Working Groups that expertise best fits into
- Determine if U.S. desires leadership on any Working Groups
- Fall 2015 Plenary Meeting somewhere?
 - Very anxious to gain access to US expertise
- 2016 Plenary Meeting in USA?



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Future NWIP: Reserve Estimation

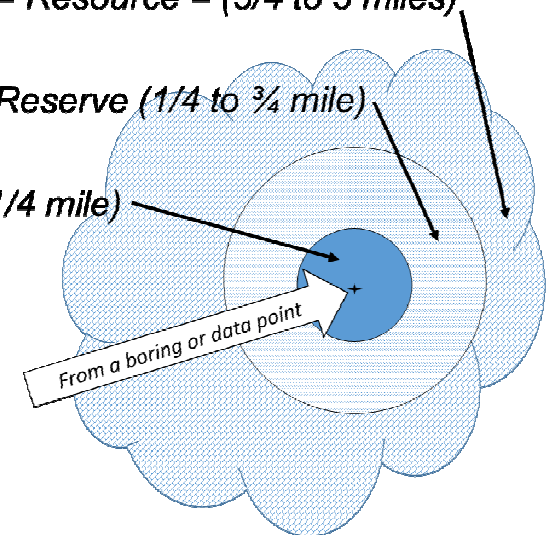
Methods of estimation of mineral reserves:

- US (**SEC Guide 7**)
- Canadian (**CN 43-101**)
- Australian (**JORC**)
- SME & CRIRSCO Template

➤ **Inferred (speculative) = Resource = (3/4 to 3 miles)**

➤ **Indicated (+/- 50%) = Reserve (1/4 to 3/4 mile)**

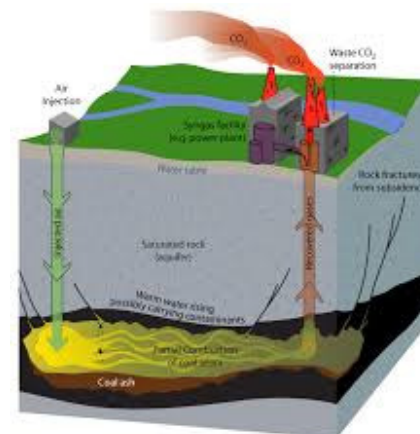
➤ **Measured (+/- 20%) (1/4 mile)**



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Future NWIP: VAM/CMM & UCG

- Ventilation Air Methane
- Coal Mine Methane
- Underground Coal Gasification



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Thank You



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