crirsco

COMMITTEE FOR MINERAL RESERVES
INTERNATIONAL REPORTING STANDARDS

CRIRSCO – UNFC Bridging Document

Paul Bankes April 23, 2013

INTERNATIONAL STANDARDS
Overview

- Considering the responsibility of governments, companies, and communities relative to the extraction and processing of mineral deposits, the industry requires best practices for reporting *Mineral Exploration Results, Mineral Resources* and *Mineral Reserves*.

- Two international systems for classification and reporting have been developed:

  - Committee for Mineral Reserves International Reporting Standards **(CRIRSCO)**

  - The United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources **(UNFC)**.

INTERNATIONAL STANDARDS Overview

- Key definitions and terminology used for reporting solid mineral reserves and resources (and exploration results) within these two classification systems have been aligned through extensive co-operative efforts between CRIRSCO and UNECE since the mid 1990s

- A parallel collaboration between SPE and UNECE for oil and gas with the PRMS classification.

INTERNATIONAL STANDARDS CRIRSCO

CRIRSCO serves as an international advisory body without legal authority, relying on its constituent members to ensure regulatory and disciplinary oversight at a national level. The CRIRSCO family of codes and standards includes:

- **JORC** (Australasia)
- **NI43-101** & CIM Definition Standards (Canada)
- **SAMREC/SAMVAL** (South Africa)
- **PERC** (Europe)
- **SME** (United States)
- **Comisión Minera de Chile** (Chile)
- **NAEN** (Russia)

INTERNATIONAL STANDARDS CRIRSCO

Potential new members:

- Argentina
- China
- Indonesia
- Mongolia
- Peru
- Philippines
- Colombia

Key Features of CRIRSCO

- CRIRSCO promotes best practices for the **public reporting** of *Mineral Exploration Results*, *Mineral Resources* and *Mineral Reserves*. The CRIRSCO standards quantify, qualify, and categorize mineral assets on the basis of the data, models and criteria.
- **Objective**: Reliable mineral inventory to underpin mineral estimates used by mining companies to attract investment and promote exploration and development activity.
- Public Reports are prepared by or under the supervision of a **Competent Person** (Qualified Person in Canada) who signs off and takes personal responsibility. International agreements to recognize overseas professional organizations (RPO)
- A clear distinction between resources and reserves.
- **Excludes "uneconomic"** and **"undiscovered"** materials

CRIRSCO - Classification Scheme

Exploration Results

Mineral Resource	Mineral Reserve
Inferred	
Indicated	**Probable**
Measured	**Proved**

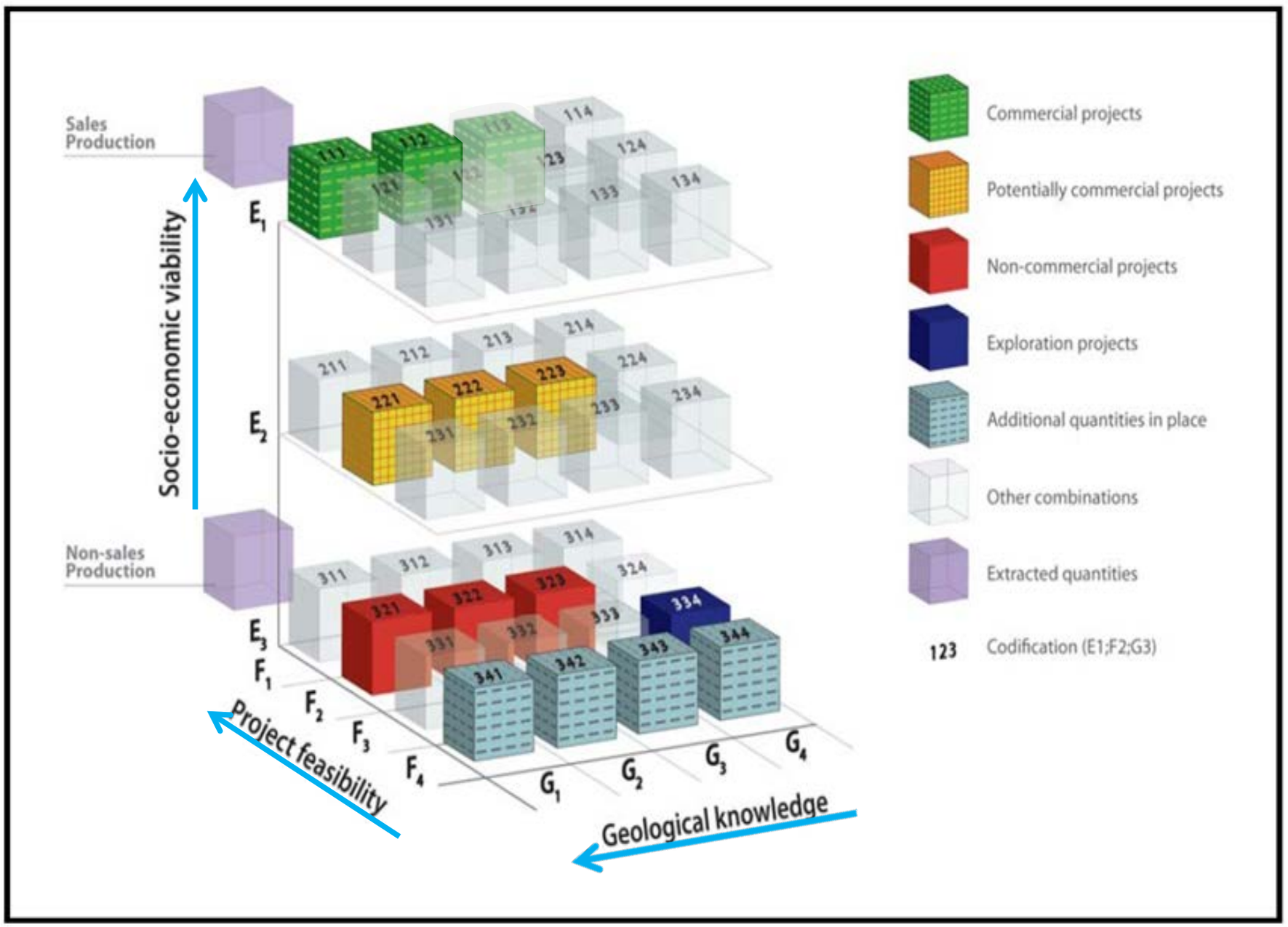
Geologic Knowledge

Modifying Factors
(mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors)

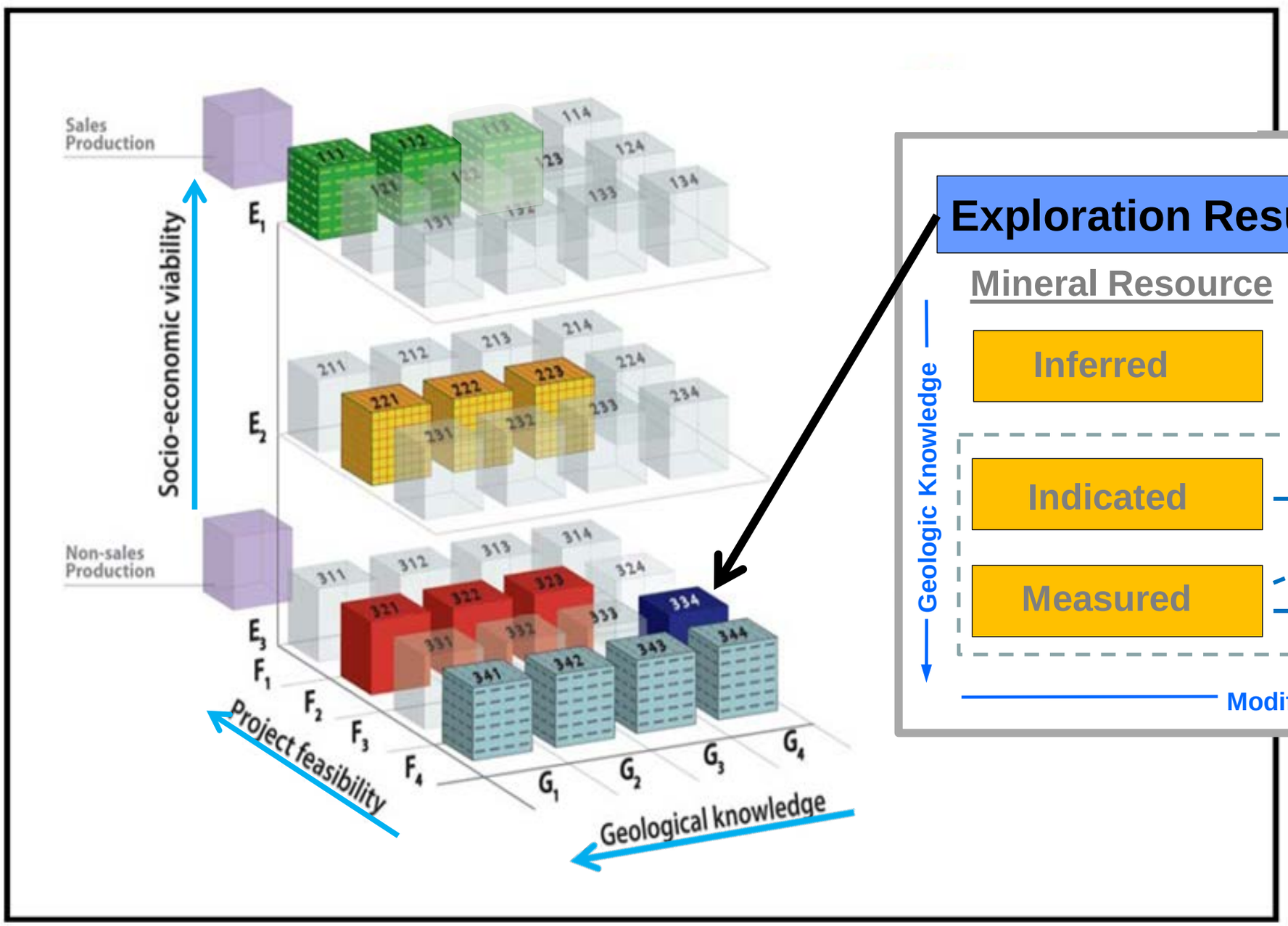
Key Features of United Nations Framework Classification

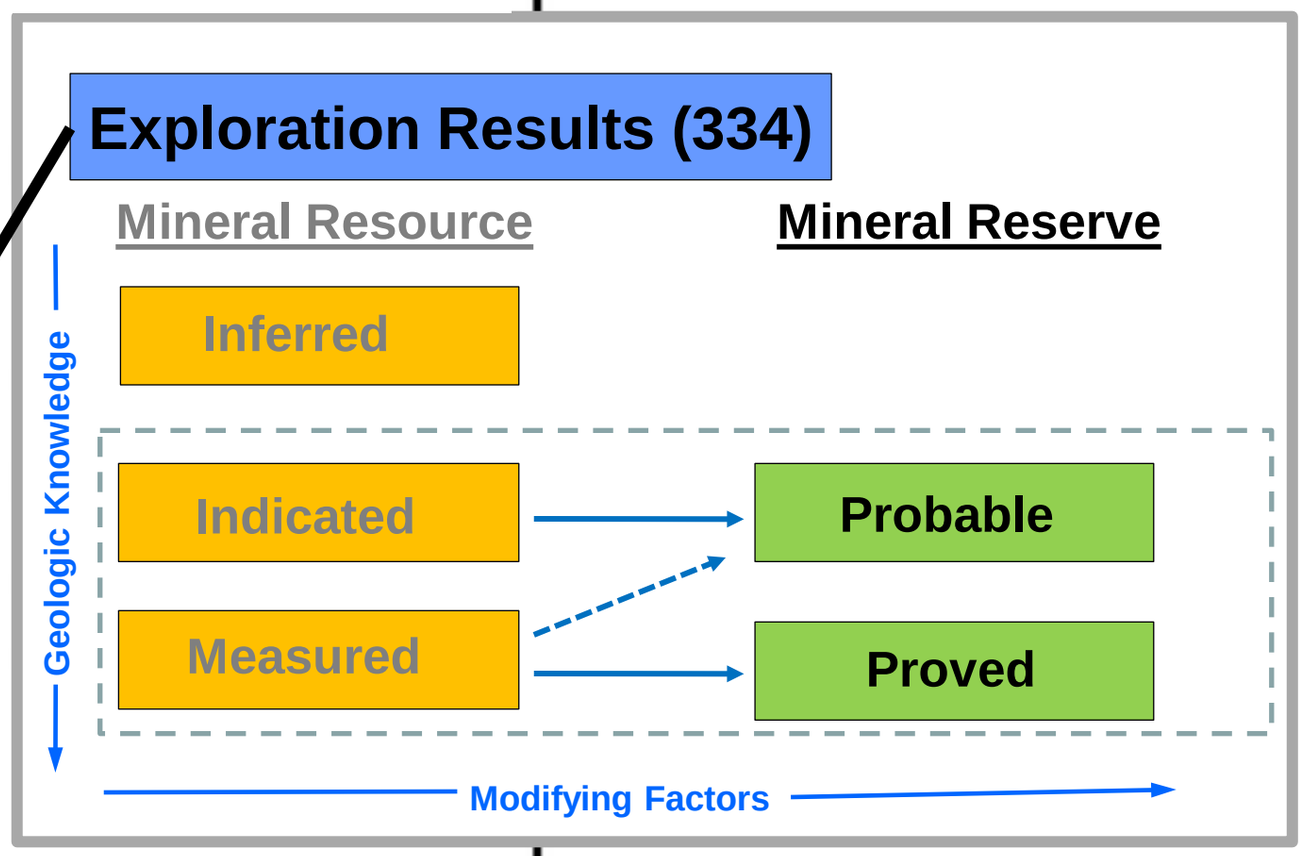
- **Generic Classification Framework** for solid minerals and oil and gas.
- Important tool for **global** and governmental **communication**
- **Not a Public Reporting Standard -** no underlying principles as a reporting standard, no securities recognition.
- **No Certification of Competency** – does not include a Competent Person who takes **personal responsibility** for estimates.
- **Includes "Undiscovered" & "Uneconomic"** material

United Nations Framework Classification



CRIRSCO – UNFC Bridging





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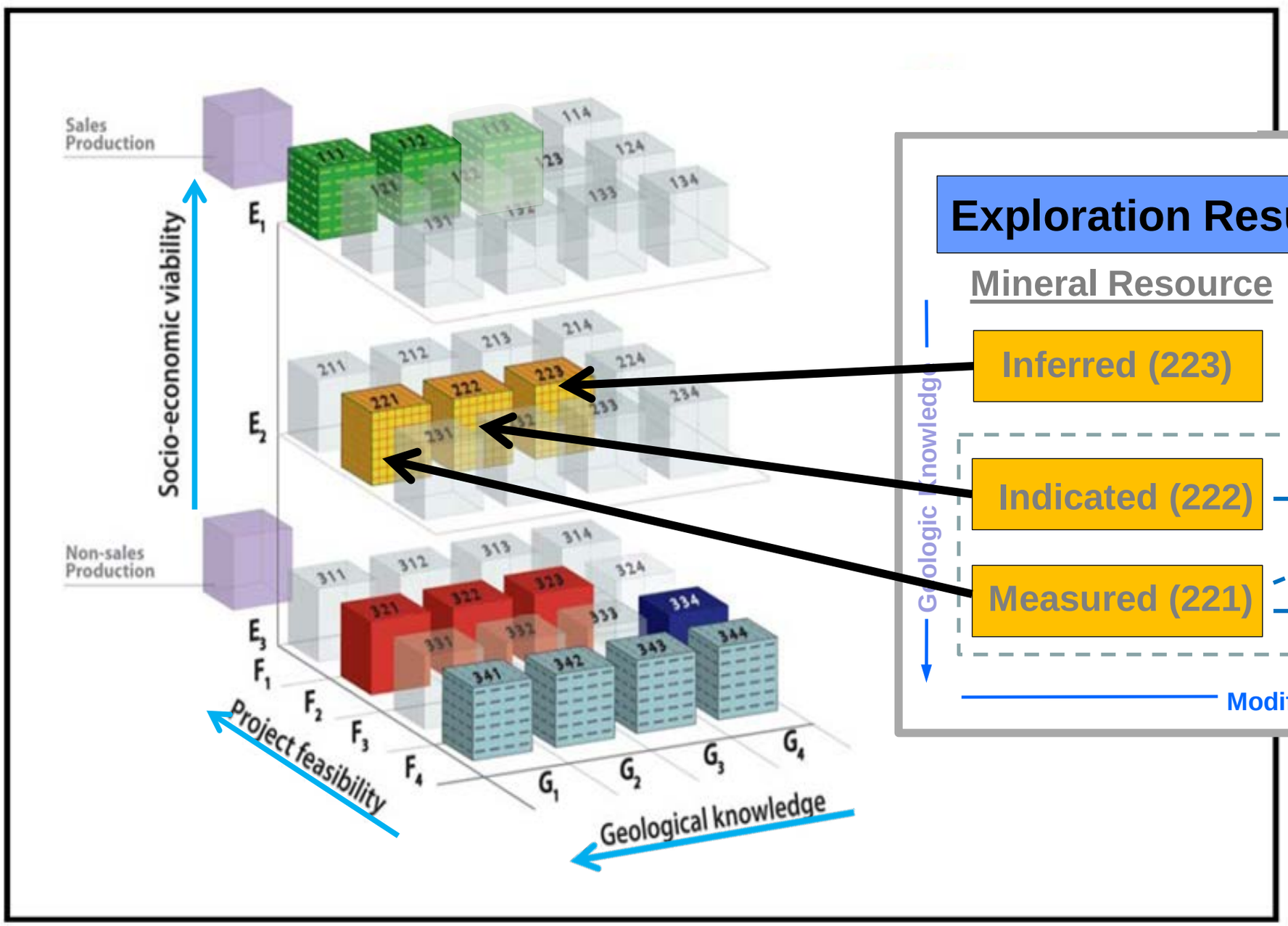

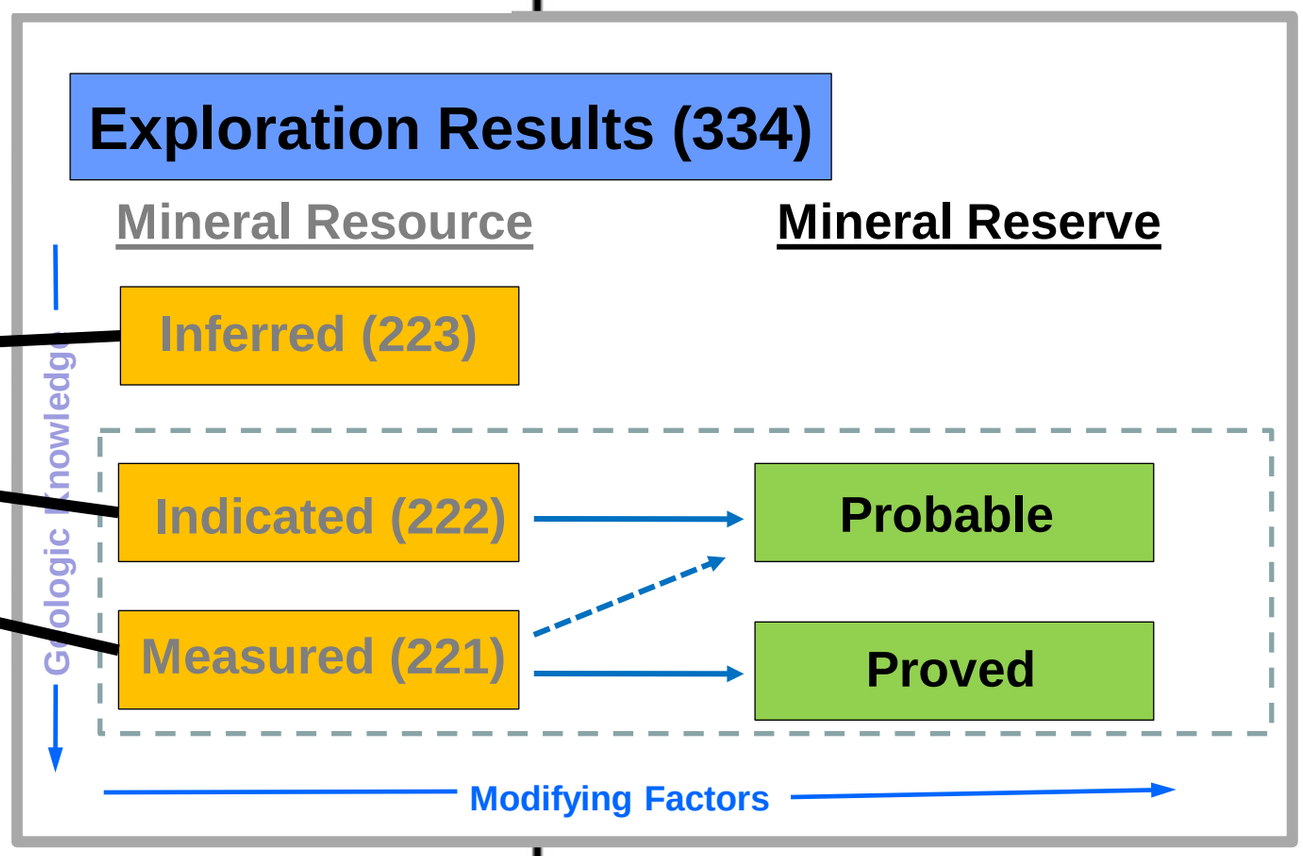

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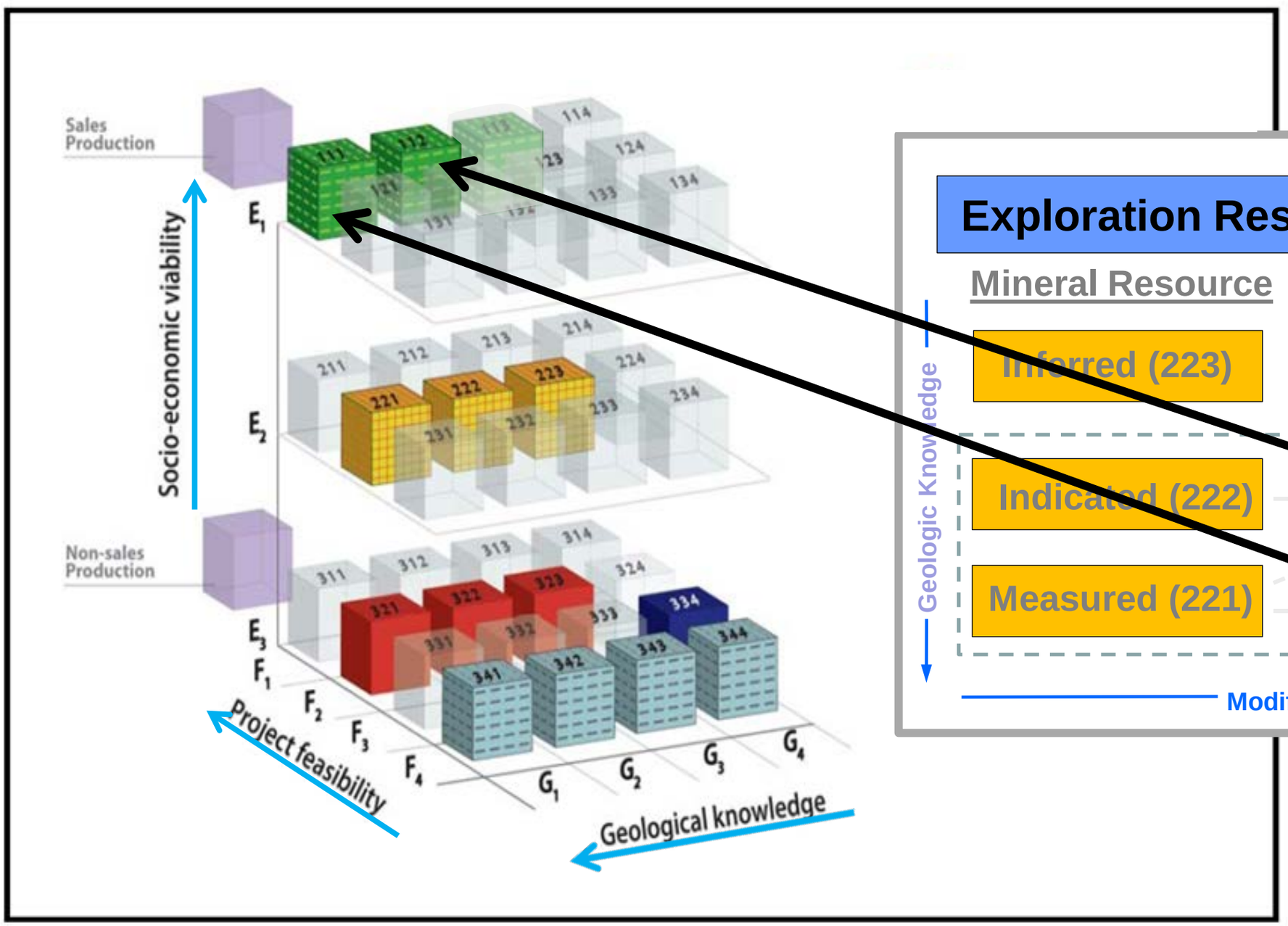

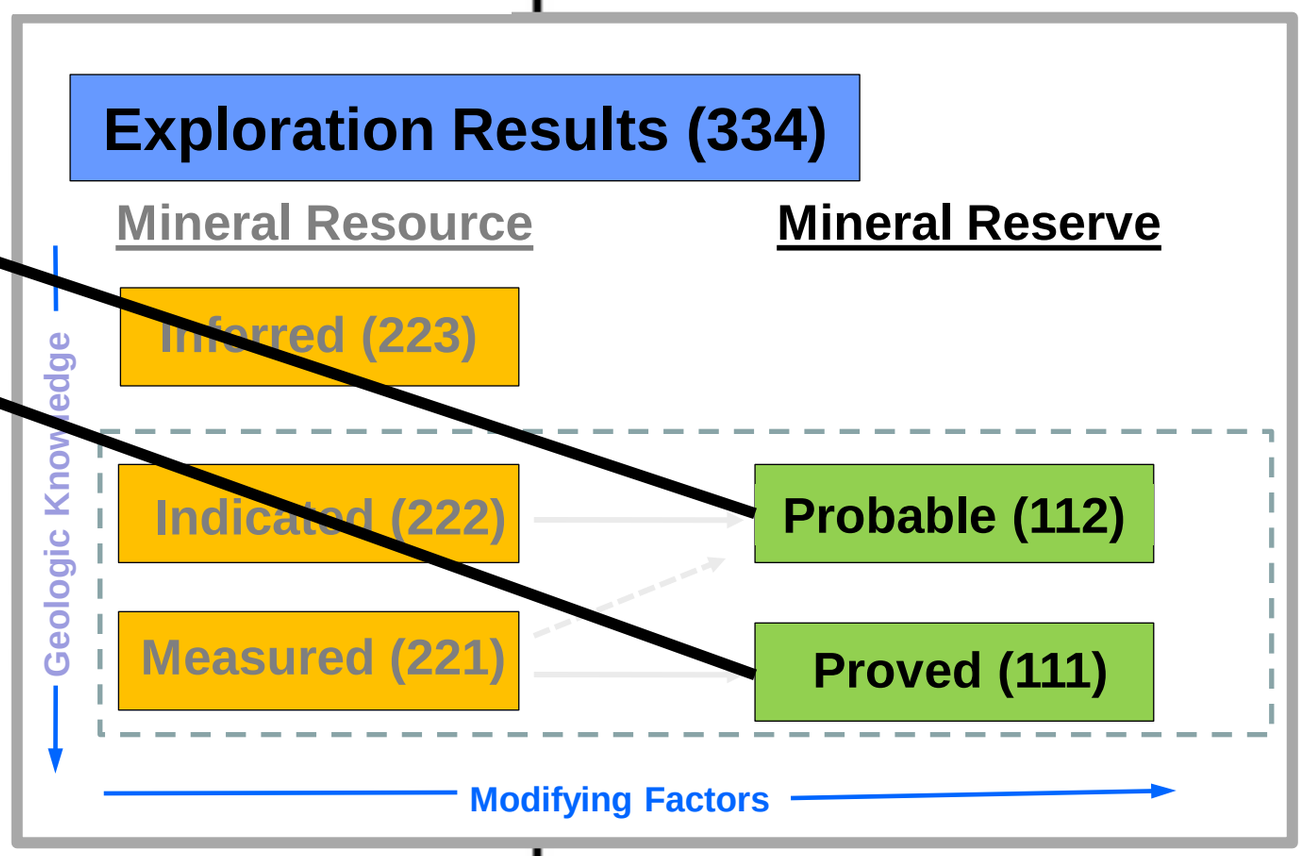

CRIRSCO – UNFC Bridging

Application of G-axis

CRIRSCO Template		UNFC-2009 "minimum" Categories			UNFC-2009 Class
Mineral Reserve	Proved	E1	F1	G1	Commercial Projects
	Probable			G2	
Mineral Resource	Measured	E2	F2	G1	Potentially Commercial Projects
	Indicated			G2	
	Inferred			G3	
Exploration Results		E3	F3	G4	Exploration Projects

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Detailed Mapping of E & F axis

	F1.1	F1.2	F1.3	F2.1	F2.2	F2.3	F3	F4
E1.1	1	2	3	4				
E1.2	1	2	3					
E2			4	4	5			
E3.1	12	12	12	12	12	12		
E3.2			6	6	6		8	
E3.3			7	7	7	7		11

		UNFC-2009 Sub-Classes
Mineral Reserve	1	On Production
	2	Approved for Development
	3	Justified for Development
Mineral Resource	4	Development Pending
	5	Development On Hold
Inventory (not defined in Template)	6	Development Unclarified
	7	Development Not Viable
	11	Additional Quantities in Place
Exploration Results	8	
Special Cases: Classification not in Template	12	
Special Cases: Less Common Mappings		

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- Questions