

CLINICAL DATA MANAGEMENT CONFERENCE

Institute for International Research

Rosebank Hotel, Johannesburg

The logo for James A Robertson and Associates (JAR&A) is located in the top right corner. It consists of the letters 'JAR&A' in a stylized, bold, white font with a black outline, set against a red rectangular background.

SOME THOUGHTS ON:
IS AN ENGINEERING MAINTENANCE MANAGEMENT METHODOLOGY
COUPLED WITH
A RADICAL RETHINK ABOUT CLINICAL DATA CODE
DESIGN
THE ANSWER TO RADICALLY IMPROVED HEALTHCARE
IN THE NEW MILLENNIUM?

Dr James Robertson
Chief Executive Officer
James A Robertson and Associates

11 July 2002

11/07/2002 2m-c-pub\53Clinical Data Coding\53ClinDC.prs
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AGENDA

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1. **Some Strategic Contextual Thoughts**
2. **Probabilistic Engineering Maintenance Management**
3. **Diversity of Systems**
4. **The Problems Associated with Omnibus Codes (ICD, CPT)**
5. **Some Thoughts On Structured Codes**
6. **A Possible Way Forward**

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SUCCESS OR FAILURE?



McDONALD, LABURN &
OTHERS REPORT THAT
ONLY

10%



OF
STRATEGIC PLANS

ARE SUCCESSFULLY
IMPLEMENTED
70% OF I.T. and B.P.R.
PROJECTS FAIL, ETC



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THE RELATIONSHIP BETWEEN STRATEGY AND TACTICS

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Efficiency ↑
Tactics

Doing Things Right

Die Fast	Thrive
Die Slowly	Survive

Effectiveness Strategy

Doing The Right Things

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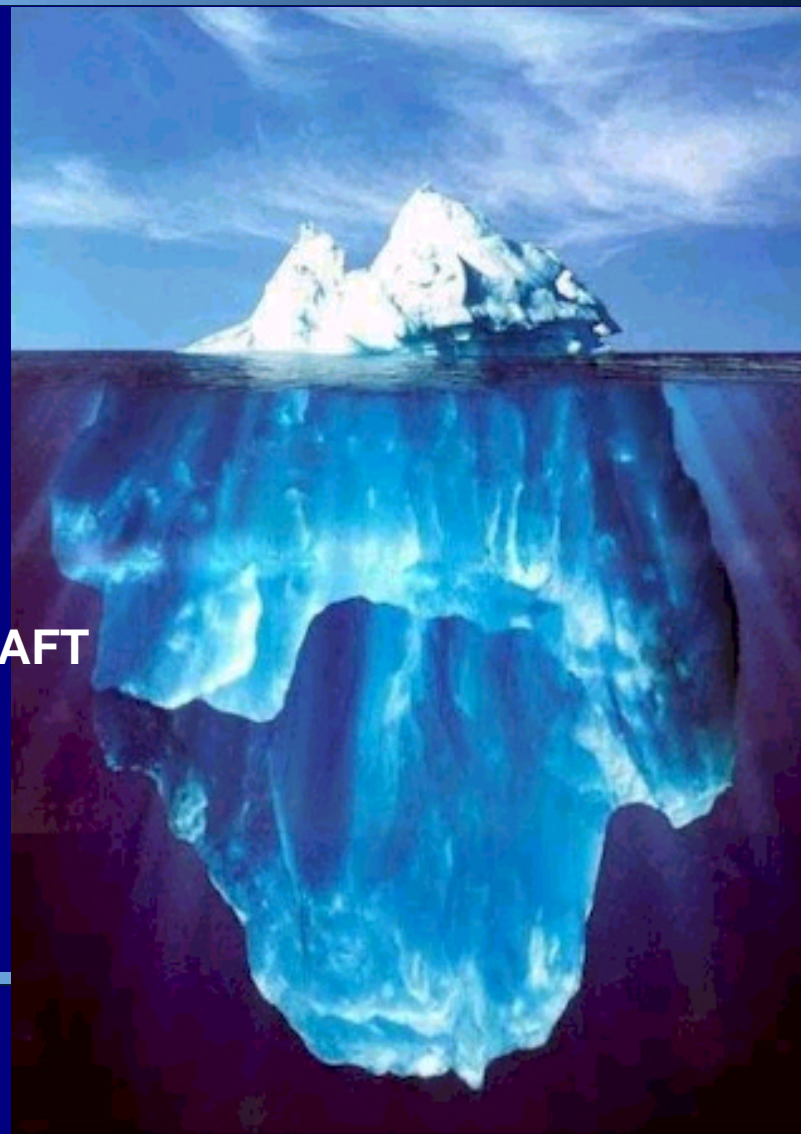
THE RELATIONSHIP BETWEEN STRATEGY AND TACTICS



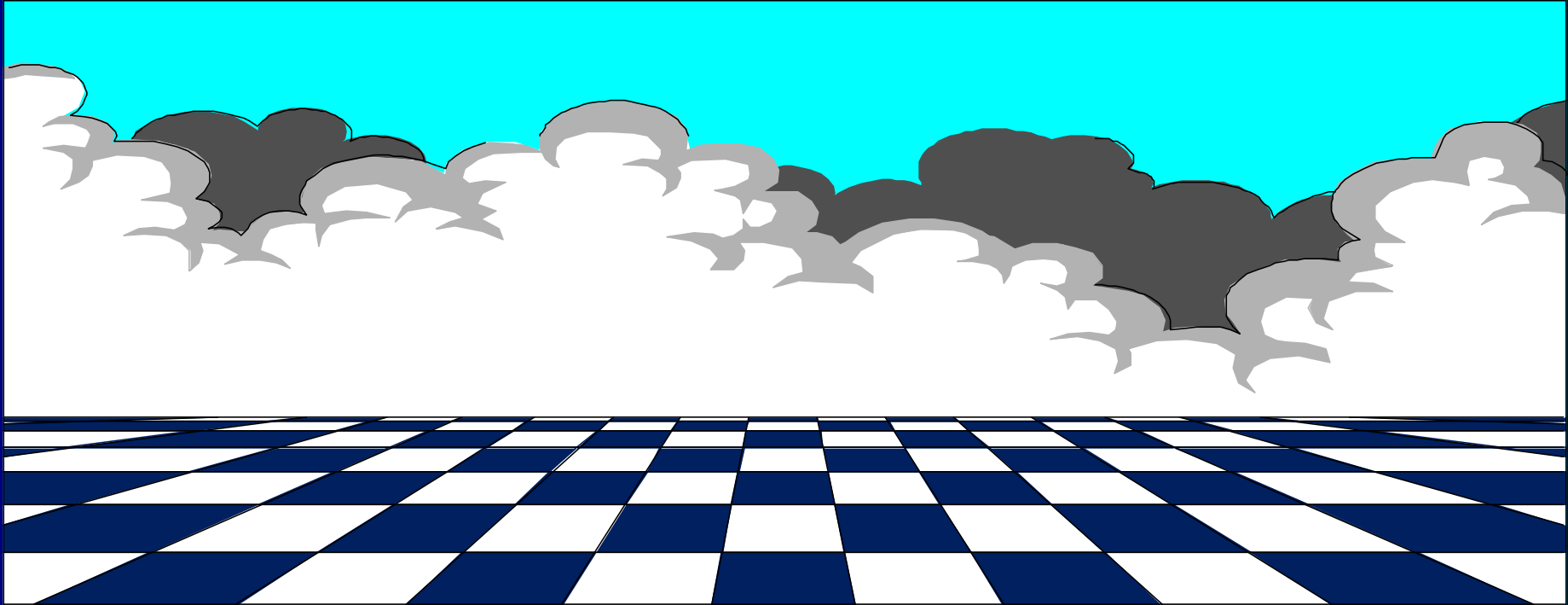
THERE IS NO POINT
IN EXECUTING A PERFECT LANDING ON AN AIRCRAFT
CARRIER
THAT IS ABOUT TO HIT AN ICE BERG

Is Healthcare Headed for an Iceberg?

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THE RELATIONSHIP BETWEEN VISION AND CURRENT REALITY



The trouble with vision is that it is soft and woolly and hard to touch and quantify. Present reality SEEMS tangible.

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PROBABILISTIC MAINTENANCE

The use of probabilistic techniques, driven by large volumes of electronically acquired data analysed against large volumes of historical data to estimate probability of failure with a high level of precision.

PROBABILISTIC MAINTENANCE



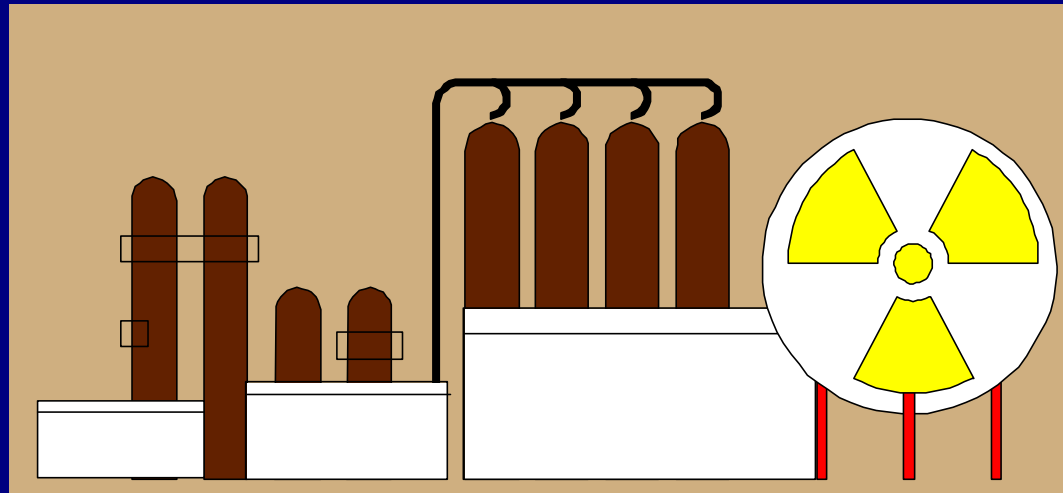
**VERY HIGH LEVELS OF
SUSTAINABLE RELIABILITY**



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PROBABILISTIC MAINTENANCE

NUCLEAR POWER STATIONS MINISCULE PROBABILITY OF FAILURE



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PROBABILISTIC MAINTENANCE

The use of probabilistic techniques in conjunction with very precise data analysis of patient metrics ranging from temperature through complex analysis of ECG to bone density measurements from x-rays offers the potential to accurately predict catastrophic health events years in advance with high levels of precision AND to measure the impact of remediation measures at a micro and macro level.

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DIVERSITY OF SYSTEMS



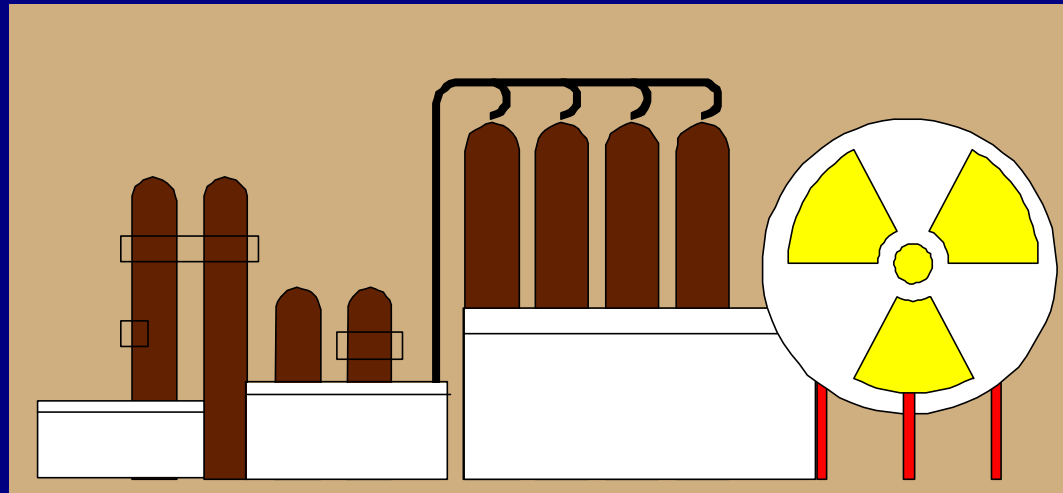
**GREAT STRUCTURAL DIVERSITY
AND FUNCTIONAL DIVERSITY,
ENORMOUS NUMBERS OF COMPONENTS**



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DIVERSITY OF SYSTEMS

**MILLIONS OF COMPONENTS OF GREAT
TECHNICAL COMPLEXITY AND GREAT PRECISION**



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DIVERSITY OF SYSTEMS

The variability between different members of the human race is FAR LESS than the variability between different makes of aircraft.

The diversity of systems and components within the human body is no greater than that within aircraft and certainly considerably less than within a nuclear power station

DIVERSITY OF SYSTEMS

The use of engineering probabilistic techniques of risk and maintenance management to manage risk and health of the human body is imminently achievable!

BUT...

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PROBLEMS WITH OMNIBUS CODES

ICD 9 and ICD 10 and CPT4 and CPT5 are omnibus codes developed from consideration of billing rather than technical analysis needs and originated in an era when electronic processing power would not cost effectively support the type of data processing that is being referred to here.

Today the processing capability IS available, but the codes have not kept pace

PROBLEMS WITH OMNIBUS CODES

Some examples of coding:

Major entity components of ICD10 ... Diag01.xls

PROBLEMS WITH OMNIBUS CODES

Some examples of coding:

**An attempt at analysing entity structure of ICD10 ...
Medcode51.xls Diagnosis Code Structure**

PROBLEMS WITH OMNIBUS CODES

Some examples of coding:

**Further aspects of ICD10 and some components of
CPT4 ... RS_CPT4.xls Thoracic Surgery**

PROBLEMS WITH OMNIBUS CODES

It is not easy to deduce structure from the codes and in the USA up to four year training programmes are required to qualify as a coder.

This keeps accurate coding out of the reach of many / most? organizations.

Furthermore, the absence of a congruent and consistent code structure makes computerised analysis a nightmare!

PROBLEMS WITH OMNIBUS CODES

IS THERE ANOTHER WAY?

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PROBLEMS WITH OMNIBUS CODES

YES

The design of structured codes, while not a widely known art IS possible.

Experience with such structured codes has resulted in DRAMATIC increases of productivity, orders of magnitude improvement in available data for analysis and other dramatic benefits!

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SOME CASE EXAMPLES

INTEGRATED ACCOUNTING SYSTEM (1991)

**Year end financials completed in six weeks instead
of six months**

**Orders of magnitude improvement in quality of
financial information**

**Orders of magnitude increase in available
management information**

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SOME CASE EXAMPLES

RISK MANAGEMENT INFORMATION SYSTEM (1993)

66% Reduction in Staff

**Orders of Magnitude Improvement in Data Quality
and Quantity**

**Massive Improvement in Risk Management
Capability**

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SOME CASE EXAMPLES

RISK MANAGEMENT INFORMATION SYSTEM (1993)

Demonstration of Prototype Software

SOME CASE EXAMPLES

RISK MANAGEMENT INFORMATION SYSTEM (1993)

The Basic Principles are readily achieved with relatively simple software.

IT IS THE HIGH VALUE INTELLECTUAL CAPITAL
AND RIGOROUS APPROACH TO STRUCTURED
AND CONGRUENT CODES THAT MAKES THE
DIFFERENCE

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SOME CASE EXAMPLES

GROUP FINANCIAL CONSOLIDATION SYSTEM (1995)

**Automatic accumulation of detailed financial
information for over 120 diverse companies**

Greatly improved analytical capability

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STRUCTURED CODE

ETC

It CAN be done and has been done in other industries not totally removed from Healthcare

AND

Without highly sophisticated software!

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STRUCTURED CODE

All that is required is a vision and the willingness to make a considerable investment in professional time.

The real cost will be a drop in the ocean compared to the benefits that will be derived!

STRUCTURED CODE

A HEALTHCARE EXAMPLE

MedCode51.xls Anatomic Site Code

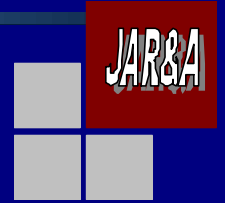
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THE WAY FORWARD



It is almost certain that at this moment, every person in this room thinks that they have understood exactly what has been said.

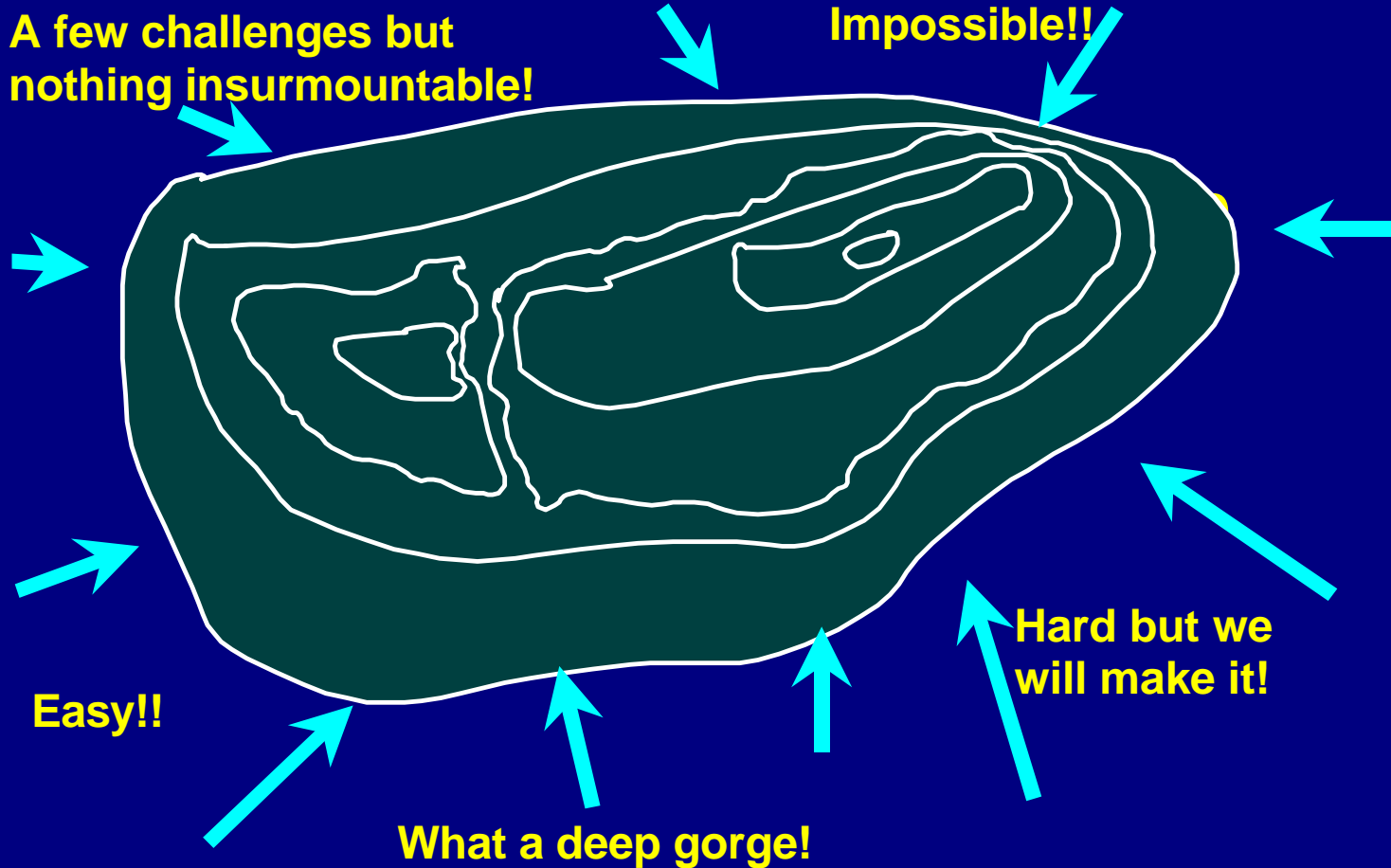
BUT

If we were to analyse in detail what each person is thinking about these topics we would find drastically different views!

THE WAY FORWARD

A few challenges but
nothing insurmountable!

Impossible!!



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THE WAY FORWARD

The full significance of what has been proposed IS complex and covers an extremely wide span of issues and activities.

While the final result will seem to be blindingly obvious, the effort required to derive the blindingly obvious is MASSIVE!

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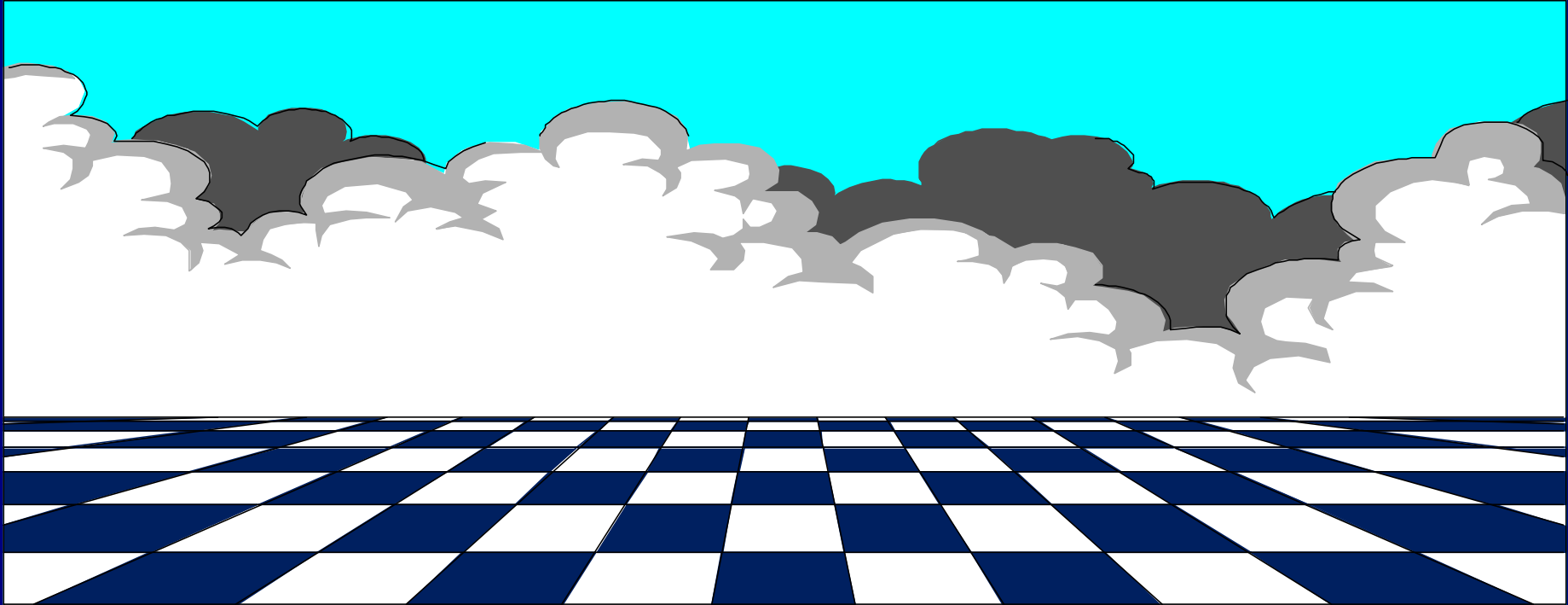
THE WAY FORWARD

THE REAL QUESTION:

Are there people in this room who can grasp the vision who are willing to invest to better define the vision, to plan it and to scope it and to turn the vision into a reality?!

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THE WAY FORWARD



The trouble with vision is that it is soft and woolly and hard to touch and quantify. Present reality SEEMS tangible.

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THE WAY FORWARD

THE REAL QUESTION:

Are there people in this room who can see South Africa becoming a leading player on the International Stage in this arena?

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THE WAY FORWARD



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DEDICATION AND ACKNOWLEDGEMENTS

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I would like to acknowledge
the contributions and inputs of all our
clients, associates, staff and families without whom
the work on which these ideas are based would not have
been possible.

This presentation is dedicated to
The Glory of The Almighty Creator
who is the source and reason for our existence

*Psalm 136:5 "To Him who by wisdom
made the heavens, for His mercy
endures forever;" (NKJ)*

CLINICAL DATA CODING

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QUESTIONS ?



James A Robertson & Associates

Tel +27-11- 791-2327 / 083-251-6644

P O Box 898, Randpark Ridge, 2156, South Africa