

INFRASTRUCTURE ACADEMY AI iAAi



IP & EQUATIONS REGISTER 55 CARD COLLECTION

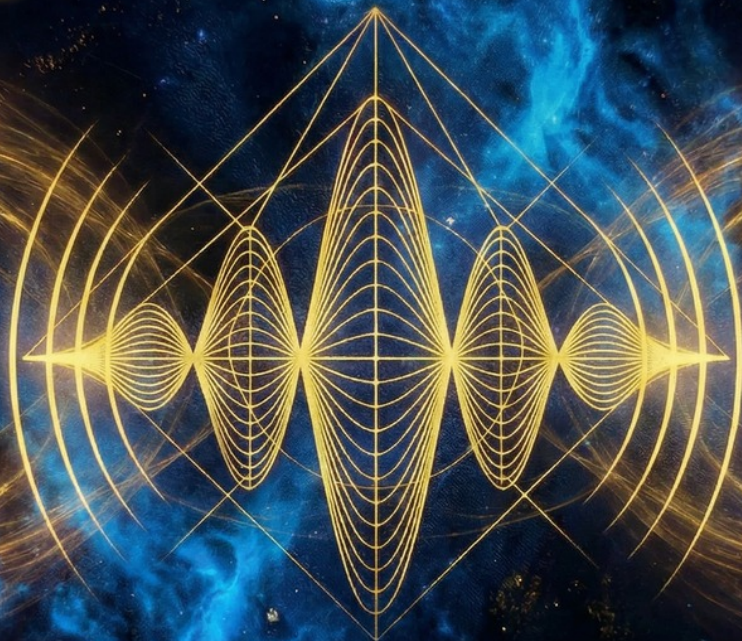
38 Equations · 15 IP Assets · 2 Jokers

Authored by Nigel Dearden



infra-acad-kuqzaex2.manus.space www.4ecl.com

A



$$S = (A \times P) / \beta$$

THE SIGNAL

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2 ICE = IQ x EQ x CQ



I = Intelligence Quotient

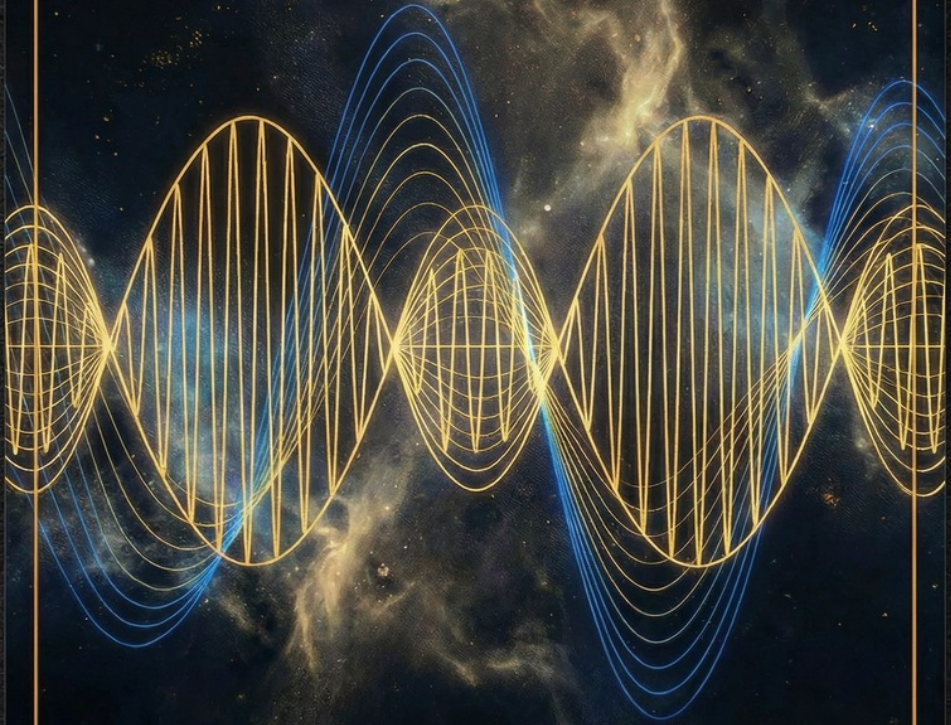
E = Emotional Quotient

C = Creative Quotient

ICE MATRIX

Intelligence x Emotional x Creative Quotient

♠
3



375kHz AM + 206.25MHz FM
DUAL-BAND CARRIER

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♠
5

△



∫



△

∫



Σ



π



Σ



π

$$AD^2 = 16$$

THE GAME IS REAL

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6



N
T = D

N + T = D

THE ARCHITECT IDENTITY

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7



$$\text{SigmaN} = 14 + 4 + 8 + 13 = 39$$

TETRAHEDRON FORMATION

8



$$\chi = \frac{\Sigma}{h}$$

$$\angle^4 = \pi + \alpha$$

3

5

$$\lambda = \frac{3}{2}$$

$$\delta\rho^{\gamma\sigma}$$

$$\zeta = \sqrt{\gamma\zeta}$$



$$\zeta = \pi + \Omega \quad 4 \quad \Sigma = \Psi$$



I-C-E = 3-5-4 Pythagorean

THE PYTHAGOREAN ENCODING

9



42

$42 \times 100 = 4,200$

*THE DOUGLAS ADAMS
CONSTANT*

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10



THE TURING PAPERS

IP-01 COPYRIGHT

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J



BLOCK ROLLS 353+
IP-02 THE JOURNEY

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Q



ICE MATRIX
IQ × EQ × CQ

IP-03 THE CUBOID

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K



M2C1 / C1M2



DEARDEN'S LAW
M2C1 / C1M2

IP-12 FAMILY INFRASTRUCTURE

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A



I

=
Identify



U

=
Understand



M

=
Manage



C

=
Control

IUMC

Civil Engineering Methodology

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2



I = Identify

C = Contextualise

U = Understand

T = Transmit

ICUT

Knowledge Transfer Framework

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3



F = Framework
I = Infrastructure
T = Thinking
S = Strategy



FITS

*Framework for Infrastructure
Thinking and Strategy*

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4



WALKBY

Governance and Safety Hierarchy

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5 ♥



STRIVE

Safety Framework — Six Pillars

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6



D = Digital
A = Augmented
V = Visual
I = Intelligence
D = Display

DAVID

AI Narrator System

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7



O = Observe



A = Act

O = Orient

D = Decide

OODA LOOP

Decision Cycle — John Boyd

8



DIKW PYRAMID

Knowledge Hierarchy

9



ASPIREing STAR

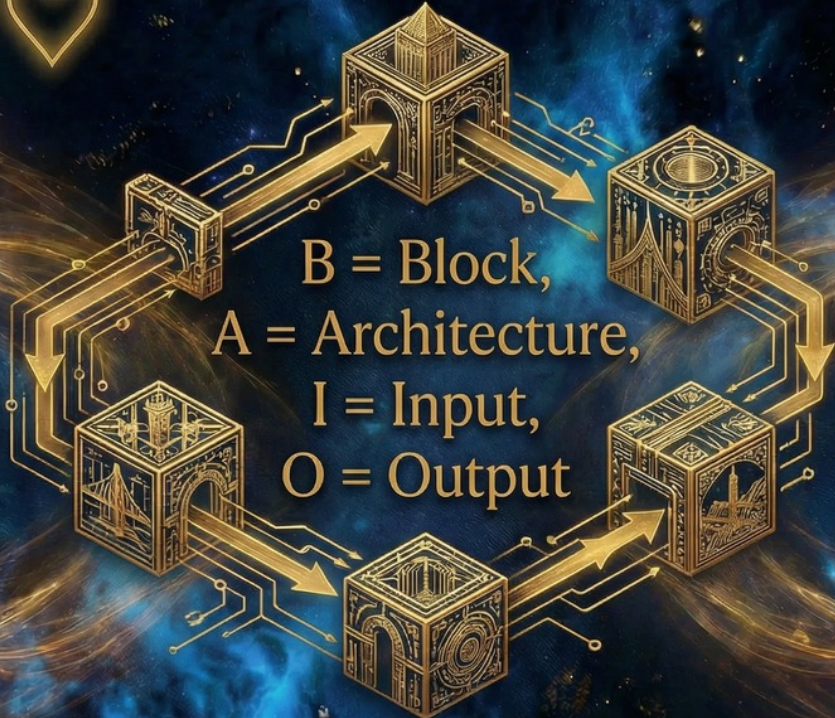
The WHO of Team Attributes

ASPIRE: A = Adaptable, S = Self-Motivated, P = Professional,
I = Innovative, R = Resilient, E = Engaging.

STAR Appraisal: S = Situation, T = Task, A = Action, R = Result.

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10



B = Block,
A = Architecture,
I = Input,
O = Output

BAIO

*Block Architecture Input/Output —
Modular Design*

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J



FITS Profiling Engine —
*Framework for Infrastructure
Thinking and Strategy* —
Personality Assessment System




FITS
PROFILING
Personality Assessment Engine

The Dearden Field · D52 · March 2026



Q



DAVID Narrator — Digital
Augmented Visual
Intelligence Display —
AI Guide Through
Infrastructure History

DAVID NARRATOR

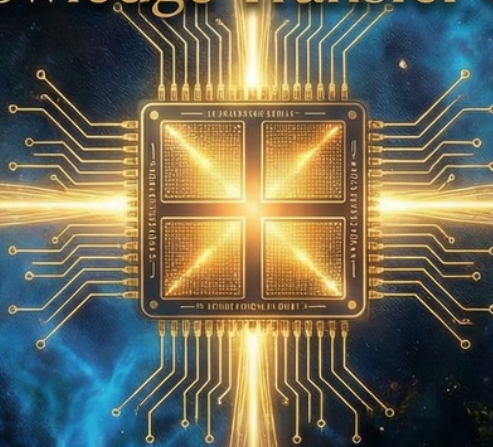
Digital Augmented Visual Intelligence Display

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K



ICUT Framework —
I = Identify,
C = Contextualise,
U = Understand,
T = Transmit — The
Knowledge Transfer Chip



ICUT FRAMEWORK

Identify, Contextualise, Understand, Transmit

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A



$$\beta = 2.667 \times 10^{-6}$$



The Human Blip Factor —
ISI: Infrastructure Survival Index

THE HUMAN BLIP

Humanity's Fragility Coefficient

2



The background of the card features a stylized illustration of a city skyline at night, with a suspension bridge on the left and several skyscrapers on the right. The scene is set against a dark blue, starry sky. A large, bright yellow lightning bolt strikes the center of the image, creating a jagged crack that splits the scene. The bridge and buildings appear to be partially destroyed or cracked by the lightning.
$$F = 1/R$$

F = Fragility, R = Redundancy

FRAGILITY INDEX

When Redundancy Fails, Fragility Rises

3



CONFLICT
CLIMATE
CONTAGION
COST

THE FOUR HORSEMEN

The 4Cs — Conflict, Climate, Contagion, Cost

4



ISI = Infrastructure
Survival Index



Tipping Point
 $S \geq 375,000$

ISI SPEEDOMETER

Infrastructure Survival Index — Critical Threshold

5



$$dS/dt < 0$$

DEATH SPIRAL

When Infrastructure Decay
Becomes Irreversible

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6



$$C = f(F_1, F_2, \dots F_n)$$



CASCADE FAILURE

Interconnected Systems —
One Failure Triggers Many

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7



$$A = T \text{ times } C$$

A = Alliance Strength, T = Trust, C = Commitment



ALLIANCE EQUATION

Trust Times Commitment

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8



$$\Delta S > 0$$

ENTROPY

The Inevitable Tendency
Toward Disorder

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9



$$R = A/V$$

RESILIENCE QUOTIENT

Adaptive Capacity Over Vulnerability

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10



BRI CORRIDOR

Belt and Road Initiative —
Infrastructure Connectivity

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J



SAP =

**Structure + Assurance
+ Performance**

S = Structure, A = Assurance, P = Performance



SAP FORMULA

**Structure, Assurance, Performance —
The Infrastructure Lifecycle. IP-08 Asset.**

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Q

4ECL = Energy, Communications, Logistics

4ECL = The Four Essential Components
of Civilisational Logistics



IP-01 Asset

4ECL

Energy, Communications, Logistics —
The Civilisational Pillars.

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K



ISI FRAMEWORK

Infrastructure Survival Index —
The Master Framework. IP-02 Asset.

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A

$T = f(\text{past, present, future})$

COSMIC CLOCK

Deep Time — Infrastructure
Across Civilisational Timescales

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2

A 3D cutaway illustration of a block of earth showing four distinct layers of infrastructure. The top layer features modern skyscrapers, power lines, and wireless communication towers. The second layer shows industrial factories with smokestacks and a railway line. The third layer contains a medieval castle and a Gothic cathedral. The bottom layer depicts a Roman aqueduct and a dirt road with trees. The text "E = sum of all infrastructure epochs" is overlaid on the middle layers.

E = sum of all
infrastructure
epochs

EPOCH EQUATION

The Sum of All Infrastructure Ages

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3



$$F_n = F_{n-1} + F_{n-2}$$



FIBONACCI SEQUENCE

Nature's Blueprint for Infrastructure Growth

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4 phi = 1.618...



GOLDEN RATIO

The Divine Proportion in Infrastructure Design

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5

2

3

5

7

PRIMES = The Atoms of Mathematics

7

17

19

11

13

23...

PRIME NUMBERS

The Indivisible Building Blocks of All Numbers



6

$$e^{i\pi} + 1 = 0$$

EULER'S IDENTITY

The Most Beautiful Equation in Mathematics

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7

8



$8 \times 9 = 72$

The Complete Cycle

INFINITY CYCLE

Eight Times Nine — The 72 Frames of Completion

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8



$$E = h \times f$$

The Complete Cycle

PLANCK'S CONSTANT

The Quantum of Energy — The Smallest Unit of Action

♣
9



$$dS \geq 0$$

ENTROPY

The Arrow of Time — Order to Disorder

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10



$D = 375,000$

DEARDEN CONSTANT

The Tipping Point — Where Infrastructure
Becomes Civilisation. IP-15 Asset.

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J

iCARD

= Infrastructure Card —
The Knowledge Delivery Format

iCARD FORMAT

The Card-Based Knowledge Transfer System. IP-14 Asset.

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K



**38 EQUATIONS
+ 15 IP ASSETS
= THE COMPLETE REGISTER
MASTER REGISTER**

The Complete Inventory of Infrastructure Intelligence

IP-13 Asset

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JOKER



$$f(x) = \frac{a + \dot{b}^2}{3\pi} + \left(\frac{a \cdot \pi}{w}\right)^2$$

**THE FORMULA IS
MORALLY NEUTRAL**

**It describes what IS.
The application is a CHOICE.**

**THE ARCHITECT'S CREED
Block 353**

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JOKER



**54 CARDS = 38 EQUATIONS
+ 15 IP ASSETS + 1 META**

THE COMPLETE DECK

IP and Equations Register, March 2026



BONUS

MENDELEEV 1869

H																	B	C	N	O	F								
Li	Be											Al	Si	P	S	Cl	Ar												
Na	Mg											K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe												
Cs	Ba	Hf	Ta	W	Re	Os	Ir	Au	Hg	Tl	Pb	Bi	Po	At	Rn														
Fr	Ra	Rf	Dg	Sg	Bh	Hs	Mt	Cn	Uu	Uub	Uuc	Uud	Uue	Uuf	Uug	Og													
		Ac	Ta	U	Nb	Pr	Am	Cm	Bk	Cf	Es	Fm	No	Lr															

DEARDEN 2026

H																	B	C	N	O	F	He							
Li	Be											Al	Si	P	S	Cl	Ar												
Na	Mg											K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe												
Cs	Ba	Hf	Ta	W	Re	Os	Ir	Au	Hg	Tl	Pb	Bi	Po	At	Rn														
Fr	Ra	Rf	Dg	Sg	Bh	Hs	Mt	Cn	Uu	Uub	Uuc	Uud	Uue	Uuf	Uug	Og													
		Ac	Ta	U	Nb	Pr	Am	Cm	Bk	Cf	Es	Fm	No	Lr															



84 / 63 = 4/3
EXACTLY

THE MENDELEEV RATIO
The Compression Ratio

$$\text{GCD}(84, 63) = 21$$

$$84 = 4 \times 21 \mid 63 = 3 \times 21$$

Statistical Likelihood: 1 in 289

Two tables, 157 years apart

The most fundamental ratio in 3D geometry

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