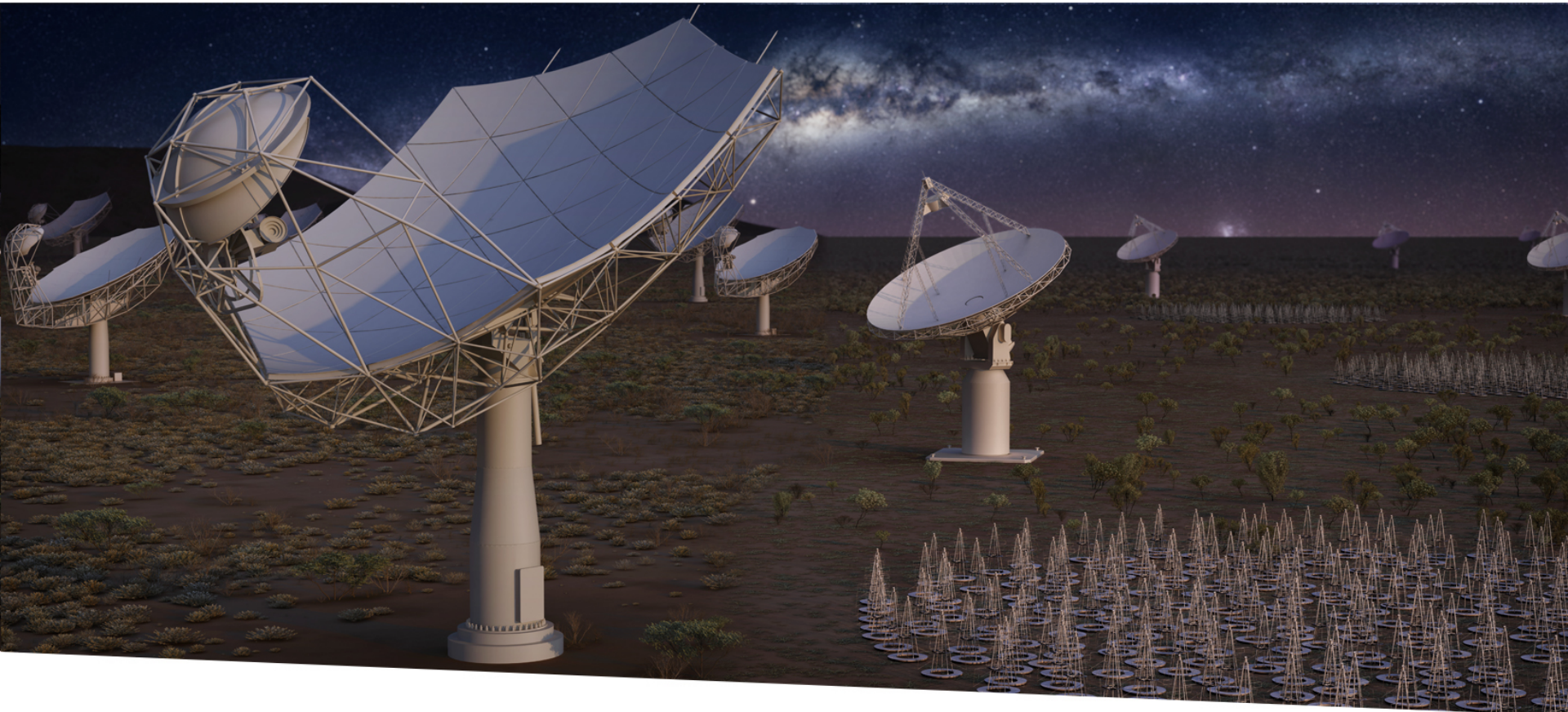


The NEC4 Contract Suite

“Suited to international collaborations”



SQUARE KILOMETRE ARRAY

Exploring the Universe with the world's largest radio telescope

Ian Hastings & John Kerr

March 2018

From the Rfl cover letter



Financial/Commercial Considerations:

Proposed Terms and Conditions – SKA organisation recognises that application of the right contract is central to the success of the overall SKA project delivery system. The NEC suite of contracts has been in existence for over 20 years and has successfully linked projects, people and processes together collaboratively to create the correct environment for successful project delivery.

SKA Organisation intends to use the NEC4 suite of contracts to procure Tier 1 contracts and expects Tier 1 contractors to contract with Tier 2 subcontractors using an NEC4 subcontract.

To find out more about the NEC Contract methodology please [follow this link](#) to the NEC homepage.

The standard NEC4 contracts will be amended appropriately to allow goods, works and services to be procured In-Kind.

Our challenges

- 25+ challenging and complex Tier 1 contracts, 50+ Tier 2 subcontracts (*want a back to back contract wherever possible*)
- In-kind and In-cash agreements – *ideally one standard contract format for both*
- Management of risk – *looking for an equitable distribution of risk*
- A truly international collaboration, *ours is not a Eurocentric project*
- Limited budget – *need cost certainty and strong change management*
- Simplicity – *a technically complex project does not automatically mean complicated contracts!*
- Extremely varied set of requirements
 - Goods (design and build)
 - Goods (COTS)
 - Goods (build to print)
 - Software
 - Professional services
 - Construction
 - Etc.....

Ours is not a “once size fits all” kind of project

The possible solutions

Plagiarize – ESO/ESA/CERN ETC.



International Federation of Consulting Engineers
The Global Voice of Consulting Engineers



**Invent something
new**

Pros and cons

- **FIDIC** – adversarial, inflexible, limited to Red Book/Silver Book, a “bricks and sticks” orientation
- **Invent something new** – risky, expensive, untried; basically a “non starter”
- **Plagiarize** – templates are not great, Eurocentric, inflexible, complex, we can do better
- **NEC4** – *lets see.....*

NEC - Overview

Three core drafting principles are:

- Stimulus to good management
- Support the changing requirements of users
- Improve clarity and simplicity

“NEC4 is a contract developed by engineers for engineers”

NEC Philosophy

Clause 10.1 The Parties, the *Project Manager* and the *Supervisor* shall act as stated in this contract.

and

Clause 10.2 The Parties, the *Project Manager* and the *Supervisor* act in a spirit of mutual trust and co-operation.

NEC – Early Warnings

- NEC contracts have a very clear, simple, but critical process for ‘early warning’.
- Sometimes described as “...the jewel in the NEC Crown...”
- The contractor and project manager should notify each other of any matter which could affect the cost, completion, progress or quality of the project.
- The early warning process is simple in principle and critical to the success of NEC contracts and facilitating the ‘**spirit of mutual trust and cooperation**’
- The contract administrator must give the process, and the associated Risk Register, the attention it deserves and develop and use his or her ‘soft skills’ to get the best out of risk reduction meetings.

NEC - Resolving and Avoiding Disputes

NEC4 introduces a new option which provides for the use of Dispute Adjudication Boards (“DAB”).

- There is a standing DAB, nominated by the parties at the time the contract is formed;
- The DAB has one or two members;
- The DAB is encouraged to make site visits and so become familiar with the project at a time when there are no disputes;
- The DAB is able to provide assistance and non-binding recommendations when disputes do arise.

NEC – A better way of doing Business

- **standardisation**
- **flexibility**
- **better processes** for better **time and cost management**
- supports & encourages **collaborative working**
- **Simplicity – plain English not “legalise”**
- ideal for **global projects and businesses**

NEC – An international approach

ECC chosen by ICC in the Netherlands

SIMON FULLALOVE EDITOR

Work is about to start on building a new permanent premises for the International Criminal Court (ICC) in The Hague, Netherlands under a €147 million NEC Engineering and Construction Contract option C (target contract with activity schedule).

It is believed to be the first time that an NEC3 contract has been used on a major construction project in Holland.

Completion in 2015

The ICC, the statute for which has now been ratified by 121 states worldwide, awarded a construction contract to a combination of Dutch contractors Visser & Smit Bouw and Boele & van Eesteren, both part of the VolkerWessels group, in October 2012. Construction is expected to start shortly with completion scheduled for 2015.

Designed by Danish architect Schmidt Hammer Lassen, the new 52,000 m² premises consists of six interlinked buildings – housing three court rooms, technical facilities and offices – plus associated car parking and landscaping.

Better value for money

ICC compared the Dutch UAV-GC contract with the international FIDIC and NEC3 forms before opting for NEC3. 'The choice of NEC3 was based

on the view that transparency, mutual trust and collaboration will lead to a better result and better value for money', said ICC project director Neil Bradley.

'In particular we want to have the highest quality building delivered on time and within our

budget. NEC3 is enabling us to have open and honest discussions with our contractor about some of the key elements of the project, as well as providing an incentive to the contractor to find better ways of achieving the same end result,' he said.



The €147 million permanent premises for the International Criminal Court is being delivered by Dutch contractors under ECC option C, the first major construction use of NEC in the Netherlands

International Criminal Court (ICC) in The Hague, Netherlands under a €147 million NEC Engineering and Construction Contract option Cfirst time that an NEC3 contract has been used on a major construction project in Holland.

NEC Vs. FIDIC



Management Advies Automatisering *Bouw Huisvesting Vastgoed*



Cour
Pénale
Internationale
International
Criminal
Court

Contract selection - comparison

NEC3 Engineering and Construction Contract (ECC); first published in 1995 and became the contract of choice of many organisations in the United Kingdom. Today they are broadly used in the UK, and are increasingly used worldwide in places such as the Middle East, Africa and the Asia-Pacific.

The table below shows the comparison of the 3 types of contract in regard to ICC's objectives:

	UAV-GC	FIDIC	NEC3
Stimulating good management	Yellow	Yellow	Green
Stimulating pro-active collaboration	Red	Red	Green
Involvement client in construction	Red	Yellow	Green
Budget guarantee	Yellow	Yellow	Green
Risk allocation	Red	Red	Green
Internationally known	Red	Green	Green

NEC type of contract, although not broadly used in all countries over the world, prevails over the UAV-GC 2005 and the FIDIC Yellow book for the ICC project.

NEC - Notable successes



“We could not have done it without the NEC”

Sir John Armit, Chair of the Olympic Delivery Authority on the BBC describing the *collaboration* that delivered the London 2012 Olympics venues



NEC - Wide Applicability

- ~~New~~
 - > 25 years' of use
- ~~Engineering~~
 - any project or service
- ~~Contract~~
 - a management tool AND a contract

NEC is well proven

- 1985 UK Institution of Civil Engineers (ICE)
 - review existing contracts and case law
 - supported the development work for new contract
- 1991 - Consultative version - South Africa, Hong Kong, and UK
- **1995 - Engineering and Construction Contract (2nd Ed.)**
- 10 years of successful use and expansion of NEC family
- **2005 - NEC3 launched** - users' feedback; new members
- 2005 - specifically endorsed by **UK** government
- 2009 – **Hong Kong** Government trialling NEC
- 2015 – NEC to be used for **all Govt contracts in Hong Kong**
- **2017 – NEC4 launched – evolution, not revolution**

NEC in practice

- **Strengths – and pitfalls**
- **NEC compared with FIDIC**
- **Users - globally**

Problems with existing forms of contract

- Based on disputes and case law
- Reactive rather than proactive
- Not focussed on management procedures or processes
- Insufficient emphasis on the programme
- Inflexible

NEC – Core Principles



Flexibility



Stimulus to good management



Clarity and simplicity

“FIDIC Speak”

Liability Clause

- The Employer shall indemnify and hold harmless the Contractor, the Contractor’s Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer’s Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in sub-paragraphs (d)(i), (ii) and (iii) of Sub-Clause 18.3 [*Insurance Against Injury to Persons and Damage to Property*].

NEC – Plain English



2. The Contractors main responsibilities

Providing the Works 20

20.1 The *Contractor* Provides the Works in accordance with the Works Information.

The Contractor's design 21

21.1 The *Contractor* designs the parts of the works which the Works Information states he is to design.

21.2 The *Contractor* submits the particulars of his design as the Works Information requires to the *Project Manager* for acceptance. A reason for not accepting the *Contractor's* design is that it does not comply with either the Works Information or the applicable law.

The *Contractor* does not proceed with the relevant work until the *Project Manager* has accepted his design.

21.3 The *Contractor* may submit his design for acceptance in parts if the design of each part can be assessed fully.

Note the use of the present tense throughout.....

NEC Clarity – you can read it!

- **plain, readable English – no latin ☺**
- **excellent structure**
- **free from references to specific UK or European laws**
- **minor secondary options can be added to suit specific local law - eg Y(UK)2, Y(NZ)2**
- **So easy to translate, if required**

NEC - *Flexibility as you need it*

- Any aspects of any *project*, any *service*
- And *supply*
- “*complex*” or “*simple*”
- Any *sector*

- Any *procurement strategy*
- Any level of *contractor design*
- Range of *payment options*
- Clear and flexible *risk allocation*

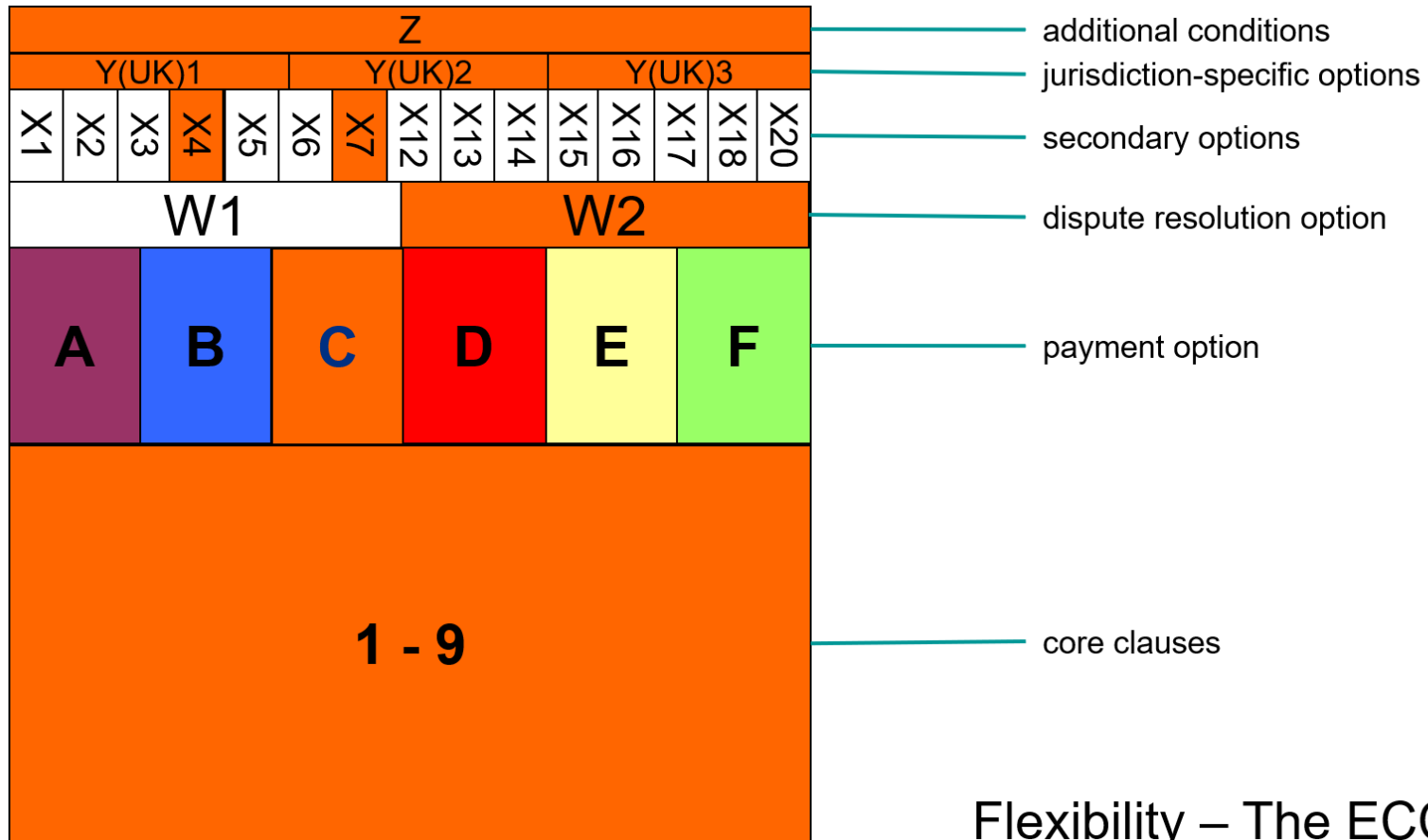
- *Anywhere* in the world

What?

HOW?

Where?

NEC – menu driven & easy to use

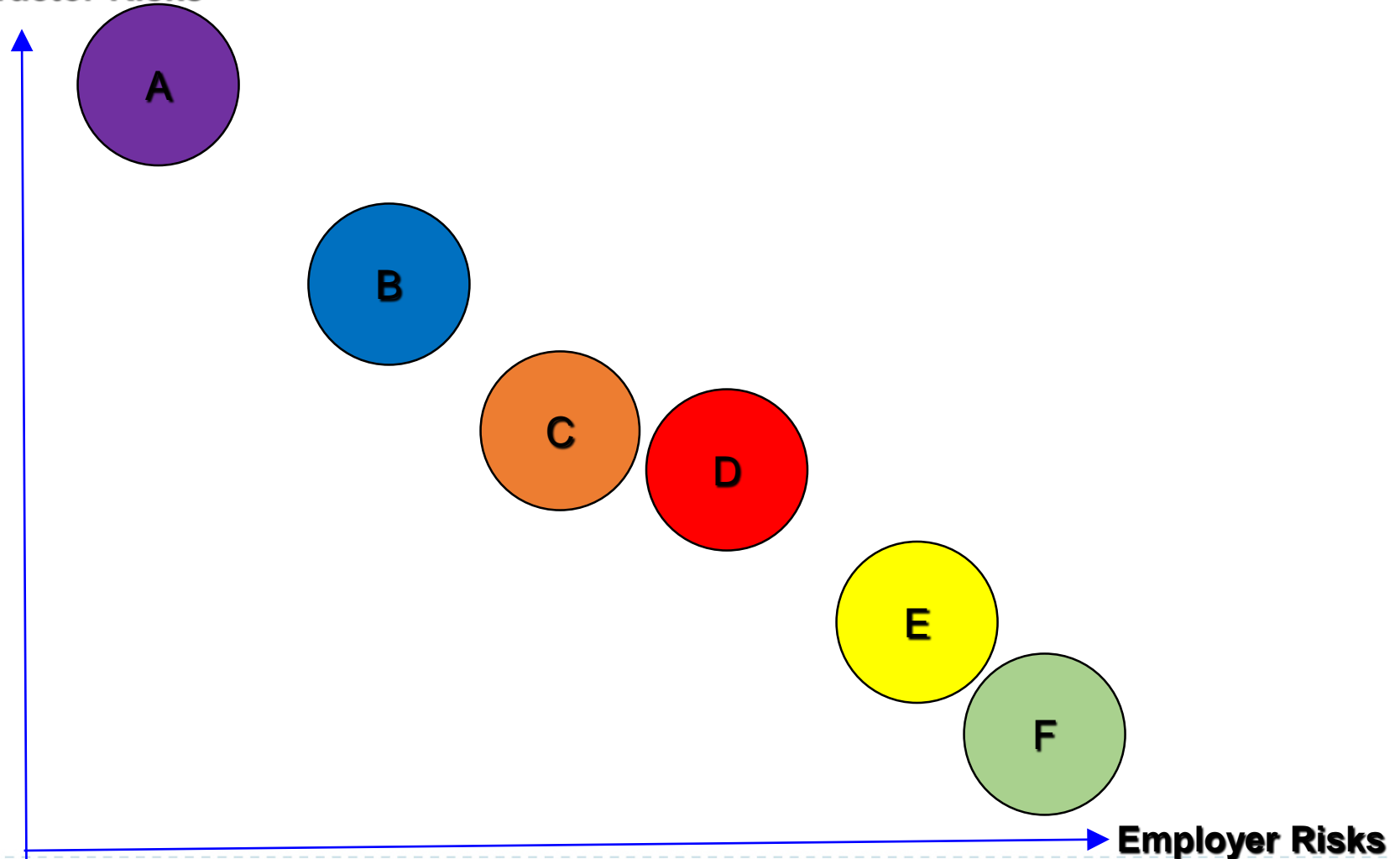


Flexibility – The ECC3

NEC – Flexible Risk Management



Contractor Risks



NEC – Stimulates good Management



communications

Accepted
Programme

early warning

compensation
events

NEC – Compensation Events

(Almost) all in
one place

Assess time and
cost for all

Based on ‘real’
effect of event

Assess *forecast*
now – not ‘wait
and see’

Clear
timebound
process for
assessment

Process driven

So systematic and process driven NEC contracts can even be managed in the cloud!

- Strong on change management
- Several web-based tools available
(CEMAR)
- Try managing FIDIC or ESO/ESA contracts
in the cloud!

Procurement has moved on.....

- Better risk management & allocation
- ‘Partnering’ and ‘collaborative working’
- Target based pricing models
- ‘Framework contracts’
- ‘Early contractor involvement’ (ECI)

All the above are supported by the modern NEC4 form of contract

Pitfalls



- To be successful NEC requires rigorous management
- **investment (resources) required** for
 - better project
 - better project management
 - better programme management
 - ‘incremental certainty’
- do NOT ‘put the contract in the bottom drawer

More Pitfalls.....

- Its “different” (but we don’t come with historical baggage!)
- Change of mindset required
- Delegations
- Need for programming expertise (supervisor’s role is critical to success)
- Lack of understanding / training

Need to address:

- Culture
- People
- Training
- Systems

*But we need to cover all these bases
whatever route we take!*

The bottom line.....

- **NEC demands good documentation**
- **NEC demands active management**
- **culture, training and systems are vital**



Use in Australia

NEC welcomed in Australia and New Zealand

BY RICHARD PATTERSON, NEC CONSULTANT

Over 120 construction professionals attended a series of NEC events in Australia and New Zealand during September 2007. More than 40 people attended the first ever NEC roadshows in Melbourne and Sydney, while in New Zealand – where use of the NEC is more

developed – a roadshow in Auckland and Wellington attracted nearly 100 people.

All four events were organised by the New Zealand Centre for Advanced Procurement in New Zealand by ICE, Road and Rail, New Zealand, and in Australia by the Institute of Surveyors, the Australian Institute of Engineers Australia.

The Wellington seminar in New Zealand was organised by Energy's NZ\$100 million refurbishment of the station, Envirowaste's new laboratory, and scientific research facilities in Auckland. Presentations are available on request.

Using NEC in New Zealand is becoming more common. NEC complies with the Construction Contracts Act 2003, giving the contractor the right to adjudicate and the right to be finalised to cover this.

In Australia things are a little different. There is no NEC legislation. However, the over 100 clients to look for better ways of working are alliancing. Existing standard conditions and NEC's flexibility are being used.

The visit led to more than 100 meetings, including Meridian Energy and

MARCH 03, 2015

The first NEC project undertaken in Australia

Successfully completed on time and budget at the end of 2014, the A\$260 million (£140 million) Mt Mercer wind farm is the first NEC project undertaken in Australia. It is also the first wind farm to be built in Australia by Meridian Energy, New Zealand's largest renewable electricity generator and a major user of NEC contracts since the early 2000s.

New Zealand & Australia

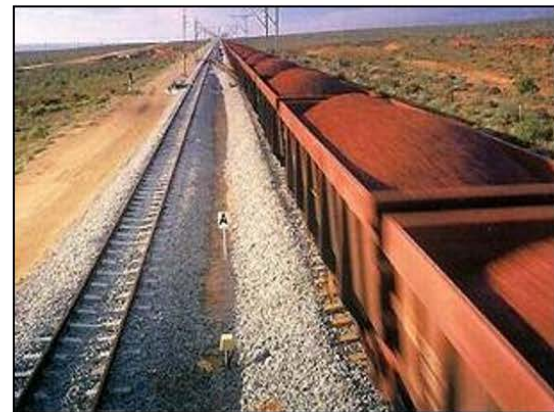
- used successfully by **Meridian Energy** in NZ – which now uses NEC for all procurement
- many others following
 - **Watercare**, Auckland
 - **Auckland airport** with Mott MacDonald
 - **Christchurch** rebuild

March 2015

NEC – Use in South Africa

South Africa

- One of 4 contract forms sanctioned by government and used in power and chemicals
- US\$10bn Programme to upgrade South Africa's ports and railways
- Client Transnet's teams partner with team from Hatch, Mott MacDonald and Goba
- ECC3 and PSC3 used
- Use in Botswana and Sudan
- Interest in Ethiopia



We took good advice



Expert advice:

“ You very helpfully explained the project (circa \$1bnUS), the 2 sites, the stakeholders, the likely procurement route and contract strategies. From what you have explained, I cannot see any reason(s) why NEC4 contracts should not be used on your project. In fact, I can see a very good cultural fit with what and how you are trying to achieve, and what NEC4 contracts offer.”

Rob Gerrard, Global contracting strategy thought leader, FIDIC and NEC contracting expert, NEC4 drafting team

Wider Consultation:

Richard Patterson (Mott MacDonald) – Global NEC & FIDIC thought leader, NEC4 drafting team
Ben Walker – NEC4 drafting team
Institution of Civil Engineers



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Thank You and questions?