



Introduction to the SKA Relational Contracts

Most of these slides are from the SKA Onboarding Training



SKAO Vision

“The SKAO is one observatory with two telescopes, on three continents; a 21st century observatory and an intergovernmental organization with sustainability and respect to all our communities at its heart, driven by a commitment to fundamental science and technology.”





Using Relational Contracting to Get to “We”

<i>Getting to We</i> <i>Relational Contracting in the New Economy</i>	
Step 1	Laying the Foundation
Step 2	Creating a Shared Vision
Step 3	Adopting Guiding Principles
Step 4	Aligning Expectations and Interests
Step 5	Staying Aligned with Governance

In April 2020 SKA software and computing leaders and representatives from supplier partners in 16 countries kicked off a series of virtual workshops using the ***Getting to We*** relational contracting process.

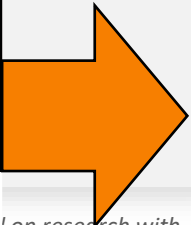
The workshops culminated with SKAO and software partners drafting and signing formal relational contracts between SKAO and the partners to create one unified software and computing “ecosystem” all with the same vision, objectives, Guiding Principles, and governance structure.



Getting to We Plan

Facilitated Virtual Workshops

Getting To We Plan	12-Apr	15-Apr	16-Apr	22-Apr	23-Apr	May-June	July onward
Introduction	Orange	Grey					
Step 1: Lay the Foundation	Orange	Grey					
Step 2: Co-create a Shared Vision		Orange	Grey				
Agree on Strategic Objectives			Orange	Grey			
Step 3: Adopt Guiding Principles /				Orange	Grey		
Define Intended Behaviors					Orange	Grey	
Step 4: Align Expectations and Interests						Orange	Grey
Step 5: Stay Aligned						Orange	Grey
Transitioning and Sustaining Your Relationship							Orange



Step 1



In Step 1 the virtual team came together to understand the why, what and how of relational contract and to work through what it means to have “trust”, “transparency” and “compatibility”:

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- Worked through the Trust Worksheet “what does a trusting relationship look like?”
- Completed a Transparency Commitment Matrix – agreeing on what SKAO and supplier partners would agree to be transparent about and what they would not be transparent about

SKAO and Software & Computing Partner's *Shared Vision*

We are a global collaboration committed to building and delivering a world-class software and computing ecosystem, enabling the SKAO community to achieve transformational science. Our culture of innovation, shared governance, and respect for diversity drives mutual value for all.



So we are all wearing the same T-Shirt!



T-Shirt based on [work from JMKim Dot Com](http://work.from_JMKim.Dot.Com); CC-BY-SA

What are we delivering?

We are a global company committed to building and delivering **software**

en **tra** *It's*

Our *It's*
and resp
for all.

Account **It's a Big Business**


**One Observatory,
Two Telescopes,
Three Continents
Single product!**

! *It's*
value



Final Strategic Objectives in Context

We are a global collaboration committed to building and delivering a world-class software and computing ecosystem, enabling the SKAO community to achieve transformational science. Our culture of innovation, shared governance, and respect for diversity creates mutual value for all.



Achievement is reflected in
the Strategic Objectives

1.
Create and sustain a trustworthy and equitable global collaboration which provides mutual value for all

2.
Embrace a lean and agile mindset to provide continuous and predictable delivery of integrated solutions

3.
Develop high quality and world leading products that are efficient, scalable and sustainable, delivering continuous value for users

4.
Foster a diverse and inclusive culture of creativity, learning, innovation and professional excellence.

5.
Deliver the systems and tools to generate, analyse and preserve data products that enable transformational science.



Step 3

The team continued to Step 3 where they did a series of sprints of two half-day virtual workshops to adopt their Guiding Principles and defined their Intended Behaviors.

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<p>Autonomy (Ryan)</p> <p>We will strive to work collectively and collaboratively to achieve our shared vision and not use power for the benefit of any one partner. We will do this by making decisions based on our joint objectives and informed by technical merit. Our culture will empower shared responsibility and a bottom-up decision making approach that promotes trust and transparency.</p>	<p>Honesty (Vivek)</p> <p>We commit to having an honest and transparent working environment, being accurate and authentic in all interactions. We empower each and every one to freely and safely express their opinions. We encourage dialogue and strive for consensus while promoting fact-based decision making.</p>	<p>Loyalty (Jeremy)</p> <p>We value each other's interests as being of equal importance. Our support for each other will be consistent, friendly, consistent and trusting. The partnership will be fair and balanced based on openness and the sharing of risk mitigation and opportunities. By working together through challenging times and jointly solving problems we stand the best chance of seeing the SGA flourish.</p>	
<p>Equity (Nick)</p> <p>We will strive to share work fairly and transparently, towards achieving the common goal. We will compensate each party in proportion to the value, risk, or investment made into the relationship. We further acknowledge that we will face unpredictable situations that we may not have addressed in our initial contract. Consequently, we will use each country's initial allocation as a starting point for our plan, but will allow for some flexibility moving forward and not let it detract from our goals, with the understanding that variations will balance out in the long run. In keeping with this principle, we will work within our</p>	<p>Reciprocity (Conrad)</p> <p>We recognize that reciprocity lies at the heart of this relationship's ability to reach its enduring goals. We are committed to making fair and balanced exchanges, whether large or small, that are mutually agreed first and beneficial to the parties. We will make no demand upon the other party that we ourselves are not willing to return in kind.</p>	<p>Integrity (Maurizio)</p> <p>Integrity is a fundamental principle that enables an internationally collaborative environment to trust in each other's words and actions. In order to achieve all our strategic objectives, both individuals and member organisations must align their words and their actions and will continually strive to make decisions consistent with our Shared Vision and guiding principles. Furthermore, we will not tolerate arbitrary decision making, nor one person or organisation saying one thing while intentionally doing another.</p>	
<p>Trust Transparency / trust Openness Transparency</p> <p>Built in quality Technical excellence Objective evaluation (focus) on working systems Innovative Relentless improvement</p> <p>Respect Psychological Safety (safe to disagree) Non judgmental - focus on the problem, don't look for the guilty</p> <p>Inclusive</p>	<p>Accountability Accountability</p> <p>Engaged Enthusiastic engagement and enjoyment of our work Committed</p> <p>Alignment Communication Collaboration Collective problem solving Good communication</p>	<p>Domingos Responsiveness We will support one another with timely acknowledgment, appropriate response, and resolution of issues, using the methods defined in the Governance structure.</p> <p>Yogesh RESPECT -We commit to working in an environment of mutual respect without discrimination of any kind. -We will ensure that everyone is able to express their honest opinion without fear of censure or retribution. -There will inevitably be setbacks and failures in our work. In such situations, we will focus on solving the problem rather than looking for the guilty.</p> <p>JC Communication and Alignment We will engage in open, clear and proactive dialogue in a safe, collaborative environment to gain alignment towards our Shared Vision.</p>	
<p>Renu Transparency, Openness Trust We will act with a spirit of transparency, trust and cooperation, sharing our intentions, key data and information needed to achieve our Shared Vision (default open, hide nothing!). We will avoid using the power of one party to take advantage of others.</p>	<p>Mauro Inclusive We are committed to fostering and supporting an inclusive workforce that fully represents different identities, cultures, backgrounds and viewpoints.</p>	<p>Vivek ENGAGED We foster an environment of active engagement and we are enthusiastic and excited about our work through an environment that gives accurate feedback by recognising the contribution on performance and growth oriented feedback. No feedback is the opposite behaviour. We want to celebrate success.</p>	<p>Marco Technical Excellence We will focus on technical excellence and built in quality, objectively evaluating our progress based on working systems. We will foster an environment of creativity, innovation and relentless improvement.</p>

Guiding Principles: Final Version

- **Reciprocity:** Reciprocity and mutual respect lie at the heart of our relationship's ability to reach its enduring goals. We are committed to moving forwards together, making mutually beneficial fair and balanced exchanges, whether large or small. We place no expectations upon each other that we are not willing to reciprocate
- **Honesty:** We commit to having an honest, open and transparent relationship, being accurate and authentic in our interactions. We empower everyone to freely and safely express their issues and opinions. We encourage constructive dialogue and strive for consensus while promoting rational and objective decision making.
- **Autonomy:** We strive to work as equals, collectively and collaboratively to achieve our shared vision and not use power for the benefit of any one partner. We achieve this through decentralised decision making based on our shared objectives as guided by the scientific goals and technical merit. Our culture promotes delegation, trust, transparency, and accountability.
- **Equity:** We strive to share work fairly and transparently, towards achieving our common objectives. We will recognise each party in proportion to the value, risk or investment made into the relationship. We further acknowledge that we will face unpredictable situations and, in keeping with this principle, we work within our Governance structure to remedy any identified and agreed inequities.
- **Loyalty:** We value each other's interests equally. Our partnership will be fair and balanced by sharing the burdens of risk mitigation and leveraging our respective expertise. We recognise the importance of dedicated long-term commitment, supporting each other especially through challenging times, and jointly solving problems to ensure the SKAO flourishes.
- **Integrity:** We are an international collaboration that values trust and integrity, and that is committed to transparent, consistent and non-arbitrary decision making and behaviour. We will do what we say. In order to achieve our shared vision and objectives, our collective words and actions will be aligned to put our common interests first and do what is right and not what is convenient.



Final Version: Intended Behaviours

- **Alignment:** We engage in open, clear and proactive dialogue in a safe, collaborative environment to strengthen alignment with our Shared Vision.
- **Engagement:** We create a culture of engagement through collaborative and productive teams. Our practices ensure that people are motivated and enjoy their work. We give people constructive feedback, recognise their contributions, and celebrate their successes.
- **Inclusion:** We support a sense of belonging by fostering an inclusive environment which recognises our different identities, cultures, backgrounds and viewpoints.
- **Respect:** We commit to maintaining nurturing environment of mutual respect without discrimination or harassment, where everyone feels empowered to express their honest opinion. We will focus on solving problems rather than apportioning blame.
- **Commitment:** We commit to achieving our goals and to supporting each other. Our teams plan on a regular cadence and deliver on these plans. However we will not make commitments on behalf of anyone else, unless they have planned and agreed to them.
- **Responsiveness:** We support one another with timely acknowledgement of communications, appropriate responses, and agility and flexibility towards resolving issues.
- **Technical Excellence:** We focus on continuous delivery of tested and working systems, based on technical excellence and built-in quality. We embrace creativity, innovation and relentless improvement.
- **Transparency:** We act with transparency, sharing our intentions and information. As partners in the delivery of the SKAO we will not leverage the power of one party over another. We consult with our partners and make timely and transparent decisions in the best interests of the project.





Step 4

For Step 4 a smaller sub-team set out to align expectations and to incorporate the Vested relational contracting constructs into a required NEC4 Contract Template.

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Because of the complexity of the intergovernmental organization across 16 countries – the team knew they wanted to find some some sort of “standard” contract template that could be universally adopted.

Choosing NEC4 for SKA Software

- Most NEC4 contracts have an extensively defined scope. We wanted to avoid a precise scope to ensure that there wasn't issues at contract/scope boundaries.
 - This drove us towards using **Professional Service Contracts**
- We wanted to keep the contracts as simple as possible
 - This drove us towards the **Short Contracts**
- We also wanted to allow both client and supplier some flexibility at the PI boundaries.
 - This implied either a Term Service Contract or a Framework Contract with shorter service contracts for the work.
- We also wanted to have a sensible place to accommodate the Relational Statement of Intent and Governance parts of the contract.
 - This drove us towards the **Framework Contract**, since it has a Framework Information document which is suitable.
- **Result was a Framework Contract with Professional Service Short Contracts for work orders.**

NEC4: Dispute Resolution Service Contract DRSC	NEC4: Supply Contract SC
 The new Dispute Resolution Service Contract (DRSC) will replace the NEC3 Adjudicator's Contract offering improved provision for dispute resolution procedures.	 The NEC4 Supply Contract (SC) is used for the local and international procurement and supply of high-value goods and associated services.

NEC4: Design Build and Operate Contract DBO	NEC4: Engineering & Construction Contract ECC
 The brand new NEC4 Design Build and Operate contract (DBO) allows Clients to procure a more integrated whole-life delivery solution.	 The NEC4 Engineering and Construction Contract (ECC) has been developed to be used in the engineering, building and construction industries.

NEC4: Engineering & Construction Subcontract ECS	NEC4: Facilities Management Contract FMC
 The subcontract is intended for use in appointing a subcontractor where the contractor has been appointed under the NEC4 Engineering and Construction Contract Options.	 The new suite of Facilities Management contracts has been developed to support a range of approaches to FM procurement.

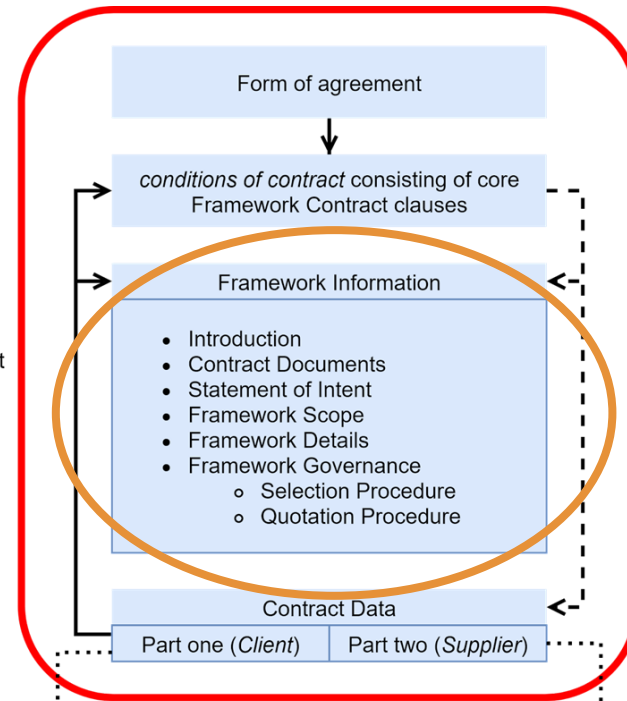
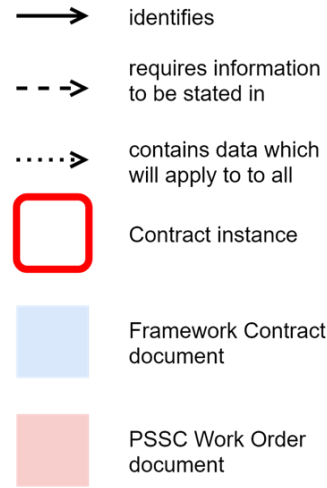
NEC4: Framework Contract FC	NEC4: Professional Service Contract PSC
 The NEC4 Framework Contract (FC) is intended for use in the appointment of suppliers to carry out construction work or to provide design or advisory services.	 The NEC4 Professional Service Contract (PSC) is intended for use in the appointment of a supplier to provide professional services.

NEC4: Term Service Contract TSC	NEC4: Alliance Contract ALC
 The NEC4 Term Service Contract (TSC) is intended to be used for the appointment of a supplier for a period of time to manage and provide a service.	 The NEC4 Alliance Contract (ALC) will be published in consultation form. It has been created to support clients in integrating a multi-party delivery team for large complex projects.

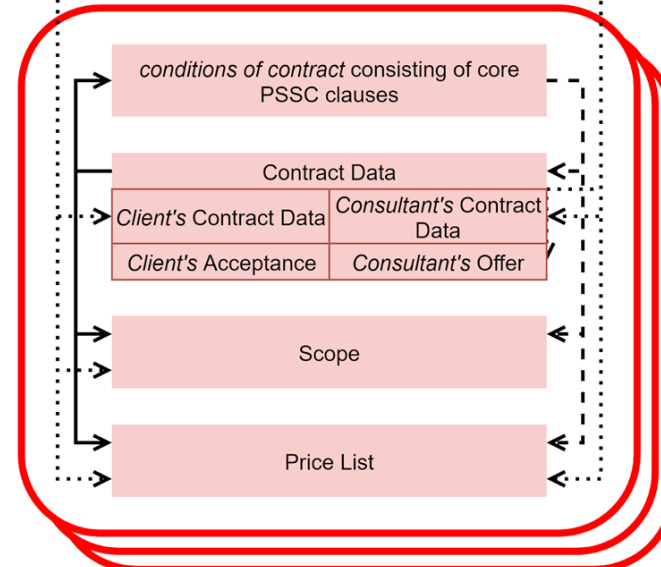


Contract Structure

- One Framework contract for the whole of construction to set the ground rules.
- Work committed and delivered using Professional Service Short Contracts.
- All contracts are identical - no special snowflakes.
- Core “playbook” is the Framework Information



Single Framework Contract Governing all PSSC Work Orders



Multiple consecutive PSSC Work Orders starting and ending on 3 month planning boundaries.



Framework Information

- The SKA specific parts of our relational All the VESTED relational aspects of our Software contracts are included in “Framework Information”
- The governance processes used across the software and computing ecosystem are also housed in this this document



Software and Computing Framework Information

SKA-TEL-SKO-0001822 Revision 01
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NEC Professional Service Short Contracts (PSSC)

This scope is different from typical NEC contract scopes, which are normally very detailed, but the SAFe processes and the relational requirements enable this.

Moreover, this extreme simplification of the scope comes from the fact that no “deliverable” is expected other than the participation of the key persons to the work processes defined by SKAO to develop its Software.

This mean that no “risk of non-delivering” is transferred to the suppliers and SKAO, through its Software Engineering team, coordinate the technical work and guarantees the successful releases of its Software.



Selection Criteria and quotation

Once every 3 months a new Work Order (PSSCs) is prepared for each of the suppliers, based on simple rules:

- Availability of key persons from a Supplier
- Availability of sufficient funds
- Need of the skills, expertise and quantity of key persons provided by the Supplier
- Adherence of the key persons to the Statement of Intent in previous PIs.
- Continuity of key persons from one PI to another.
- Performance of the key persons of the supplier in previous PIs.

Typically, these information are gathered before the Agile PI planning, trying to maintain the maximum continuity with the previous PSSC.



Step 5



The smaller team went on to develop the governance for the software and computing ecosystem.

Getting to We

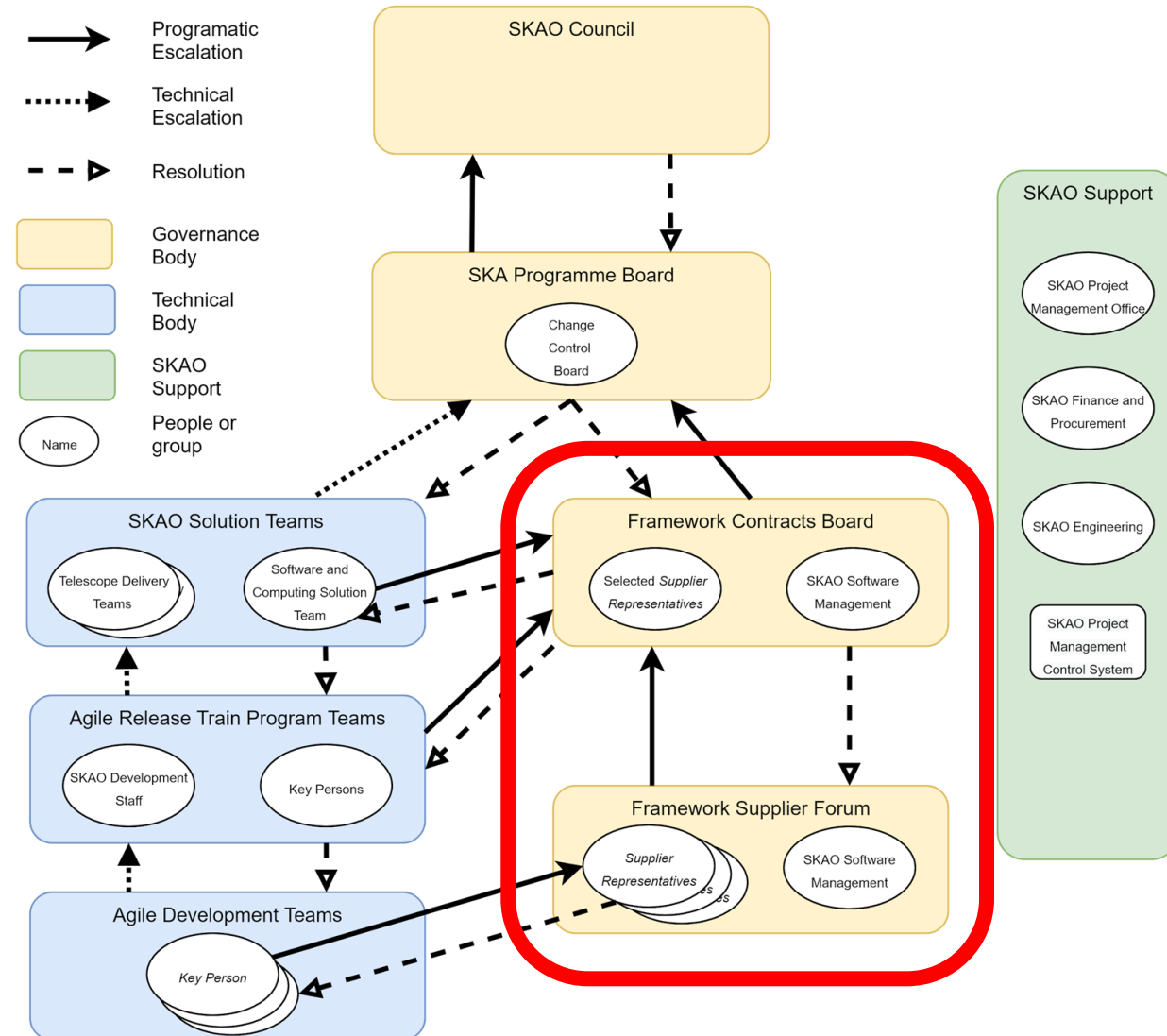
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- SKA has multiple similar relational contracts (~20) which creates an “ecosystem” of relationships that needs to be governed ensure alignment and monitors progress to the shared vision/objectives.
- The team designed the governance structure and created the protocols needed to manage the ecosystem
- The Framework Information contains also the guidelines for the implementation of this Governance structure.”

Contract Governance

- The Framework Information defines how the new governance bodies for governing the software contracts fit in the structure composed by the main development and high level project oversight bodies.
- Framework Supplier Forum including representatives of SKAO and all the suppliers
- Framework Contracts Board comprised of 7-9 people from both SKAO and suppliers
- They both support the SKAO Project Manager to achieve the high performances needed to pursue the goals of all sides.



Support and Training

- We will provide necessary training
 - Will be updated when needed.
- We also pay for other costs (travel, subsistence etc).
- Other developer onboarding info here:
 - <https://developer.skao.int/en/latest/getting-started/getting-started.html>

Course	Role	Supplier Representative	Developer/Engineer	Product Owner/Manager	Agile Coach/Scrum Master	System Architect/Engineer
SKAO Onboarding		✓	✓	✓	✓	✓
Relational Contracts		✓	✓	✓	✓	✓
Governance		✓				
SAFe for Teams			✓	✓	✓	?
SAFe for PO/PMs				✓		
SAFe for Scrum Masters					✓	
SAFe for Release Train Engineers					?	
Tango Control System			?			?
Kubernetes (Linux Foundation)			?			?
Software Architecture						?



Monitoring the Health of the Ecosystem

SKA runs exercises to measure the health of the ecosystem of contracts.

- Compatibility and Trust Assessment
- "Happiness Survey"

"Monitoring relationship health helps to identify earlier potentially difficult situations or just improve relationships that are already working well."

Nick Rees

Head of Software and Computing for SKA



SKA is soon to be
the next
Vested for Success
case study!

Let's look at a sneak
peak of the results on
the following pages.

SKAO

SKA Observatory

Coming Soon!



VESTED For Success Case Study

SKA Observatory

Changing the Status Quo in Software and Computing
with Formal Relational Contracts

A Report Authored By:

Kate Vitasek and Julia Jakus

HASLAM
COLLEGE OF BUSINESS
THE UNIVERSITY OF TENNESSEE, KNOXVILLE

Benefits: Scalability of the Framework

SKAO is aspiring at developing a large and complex software using very few internal resources to leverage a large and diverse pool of experts and developers.

These contracts are tailored to be nimble and scalable, but to do this they need:

- to be all identical and make the obvious and necessary differences manageable without confusion
- to leverage the autonomy and expertise of the suppliers, that must be trusted to take the right decision, even when not directed to
- to carry low intrinsic risk for the project and the suppliers so that the compliance obligations are generally less demanding
- to decouple the software development from contract management processes, so that the first (typically more demanding) can be managed separately, by specialists
- to synchronise the timing of the contracts to serve the needs of the software development (not the opposite)
- to operate under a Governance structure that enables handling so many contracts in parallel



What Team Members Say



Traditional contracts are 'stress-inducing'. I very much prefer the flexible, convivial, friendly, and viable nature of relational contracting."

Yogesh

"As a supplier you don't fear that the rug is going to be pulled out from underneath your feet at any given moment. This creates an environment where supplier partners aren't just selling products, services and billable hours. We really are setting out to collaborate to do something very cool and we do things differently here. It is much more rewarding personally."

Ray

"Relational contracting leads to greater productivity and happiness because individual know they won't be shoulder the blame for speaking up. The relational contracting mechanisms we use foster an environment where it's not *I have a problem or you you have a problem*. Rather as soon as somebody says a problem emerges, it becomes a *joint* problem which which very much changes both when and how you raise the issue. This has played an immense role in team cohesion, as it not only creates new ways of being heard but also solidifies that productivity isn't the only metric.

Happiness is, too."

Cassandra

"Traditional contracting are rigid, transactional, and heavy while relational contracting is uplifting and encourages collaboration and openness."

Tiree