



MANA VR Collective

SENTIO ERGO SUM

Creating Cultural Treasures in True Virtual Reality

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**MANA VR Collective
Founding Members**

HAKAMANA Ltd
Tania Wolfgramm
Pou Kapua Creations
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Reality Virtual Ltd
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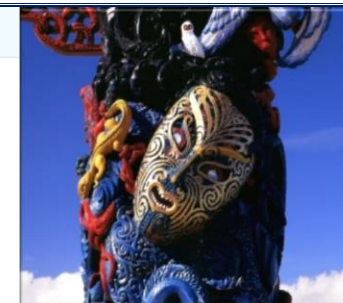
MANA VR - Blueprint for Transformation
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SENTIO ERGO SUM

MANA VR Collective

Creating Cultural Treasures in AR and True VR



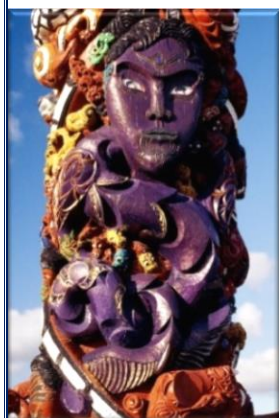
What MANA VR Collective can do for you...

...we can bring your dreams to life in Virtual Reality!

MANA VR creates wonderful cultural treasures in virtual reality. These VR treasures will express stories of your culture, lands, people, histories and legends. We will co-create the best multisensory true VR experiences and technological adventures that will change the way people sense the world; awakening and strengthening their relationships to place, space, humanity and to nature. With a culturally diverse team and holistic outlook, the MANA VR Collective comprises agencies, entrepreneurs and technology experts passionate about the innate value of storytelling and immersive experiences.

We combine the latest in digital innovation and world-class Virtual Reality (VR) technology to create incredible ‘being there’ digital and online experiences and platforms to help shape our age. We have a unique skillset that integrates cultural identity, VR integration, digital innovation, and brand strategy, to create beautiful, bespoke, meaningful VR and digital experiences. To achieve this, we have streamlined the process of entity, asset, object, art, and environmental capture (built and natural), delivering ultra-realistic real-time central graphics (CG) experiences, combined with the ability to create a range of online experiences. Our photogrammetry to virtual reality pipeline has been perfected into an art.

We are effectively encapsulating reality in all its visual nuance, creating nothing short of a ‘being there’ sensation for real-time VR applications. This process is a godsend for digital storytelling, visual effects (VFX) cinematography productions, innovative viral marketing strategies and end-user experiences alike.



**I AM
MATAKEREPO**

**I am blind
Yet I can see all
I am from the past
Yet I can gift you
a glimpse of
the future**

Combined with our experience and expertise for digital storytelling, we can create incredible user experiences using digital innovation and online development – whether through customised websites that incorporate VR, video and imagery, login platforms, multilingual elements and more...

Collectively we have decades of experience across multiple capabilities including design; data science and analytics; technological and platform design and development; immersive (Virtual / Augmented / Mixed Reality) experience technologies; media production and product development, with great process methodologies to bring your vision to fruition.

HAKAMANA sparks these within you ...

HA - your breath of life that connects all living things

KA - your fire and energy to transform

MA - your light and presence of being

NA - your relationships and connections

HAKA - your fire dance of life and energy

MANA - your leadership and strength

HAKAMANA - creative process to realise your dreams



MANA VR can showcase how our process of reality capture photogrammetry to virtual reality pipeline has been perfected into an art. We share the results - incredible 'being there' VR experiences!



What makes MANA VR unique and remarkable?

MANA VR creates wonderful cultural treasures in virtual reality. These VR treasures will express stories of your culture, lands, people, histories and legends. We co-create the best multisensory true VR experiences and technological adventures that will change the way people sense the world; awakening and strengthening their relationships to place, space, humanity and to nature. With a culturally diverse team the MANA VR Collective comprises agencies, entrepreneurs and technology experts passionate about the innate value of storytelling and immersive experiences.

How will MANA VR stand out?

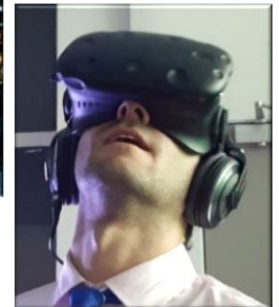
The quality of our VR Experiences is amazing. The photogrammetry and volumetric scanning, combined with our VR technology pipeline has led to the creation of incredible VR experiences. We can put users on the tip of Auckland's Sky Tower - at 328 metres it is about the same height as the Eiffel Tower! The sensation of stepping out into the air - of flying - is breathtaking. We will also share the Pou Kapua VR Experience of the largest Māori Pacific totem in the world. Pou Kapua is a symbol of Māori / Pacific / Indigenous cultural identity and creatively depicts enthralling stories of ancestral journeys, fascinating legends and stories.



MANA VR – We support Cultural Conservation

Many of the world's cultural and natural heritage sites are under threat from both people and environment. For example, the rise of global tourism now strains the infrastructure of nations, cities, and local communities who are trying to both promote heritage sites yet also preserve them. Security issues are also increasing in many of our cities. Many guardians of these wonderful and often sacred places are limiting access to them, in an effort to conserve their wonder. Many of these cultural and natural treasures, some built by people, others by nature may not be available for people to see and experience, and MANA VR's dream is to bring the stories, histories, and legends of these incredible treasures to life in virtual reality.

Collectively we have decades of experience and expertise across multiple capabilities including design; data science and analytics; technological and platform design and development; immersive (Virtual / Augmented / Mixed Reality) experience technologies; digital storytelling, media production and product development, and platform development. We combine the latest in digital innovation and world-class VR technology to create incredible 'being there' digital and online experiences that can help to shape our age – and the hearts of minds of generations to come.



MANA VR can share some its VR experiences including Pou Kapua VR which puts users directly in touch with the largest Maori / Pacific Totem in the Pacific - placed in VR on a beautiful beach in New Zealand. The quality of the VR production is incredible. We can also showcase our VR experience that puts you at the top of Auckland's Sky Tower - not for those afraid of heights! And we have others of beautiful heritage buildings and more. We will also showcase our volumetric capture and other elements of our VR technology pipeline. This will give visitors a flavour of how wonderful VR experiences of their *own* countries will allow people from all over the world to feel and sense many aspect of their culture, people, places, natural and created treasures - even from the comfort of their lounge! This may trigger a desire in many VR visitors to want to see them in person - and millions will certainly want to share their experience with others.

Importantly, our MANA VR Approach ensures that we work respectfully with you at all times, whereby everyone is treated with honour and dignity, and that we work together to protect all elements of the process, bringing your vision to life in the best way possible.





MANA VR COLLECTIVE
OUR ETHOS & APPROACH



EXPERIENCING THE CITY OF AUCKLAND IN TRUE VIRTUAL REALITY ... CULTURAL & CREATIVE GENIUS AT ITS BEST!

You start your journey by invitation. The karanga / call to the wharehau / traditional Maori meeting house touches your spirit. You visit magnificent Pou Kapua, teleporting to the top to greet Maui. You stroll through sumptuous galleries, laden with amazing art offerings. Then you stop at a beautiful beach, water laps at your feet. You rest a little at an inspiring cathedral, before you move on to Sky Tower. The heights are dizzying. You are on a chair at the very top of the spire. You step off – into air! You are simultaneously terrified and exhilarated as you fly! The views across Auckland City are breath-taking. **You love it! You want more ...**



Note: Refer to page 17 for links to these VR experiences



on © MANA



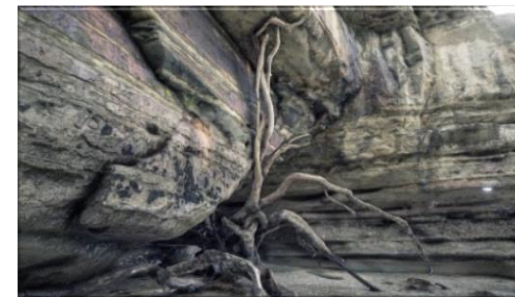
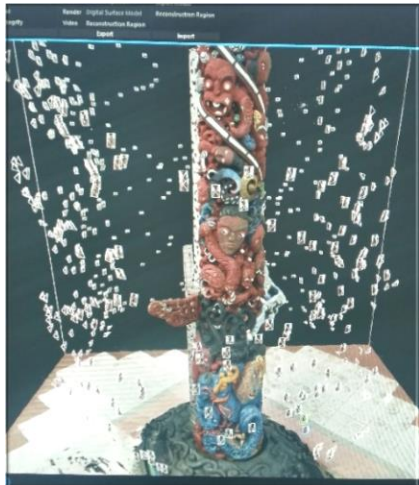
POU KAPUA IN VIRTUAL REALITY ... HONOURING CULTURAL & CREATIVE GENIUS ... EXPERIENCING ANCIENT FUTURES



SENTIO ERGO SUM

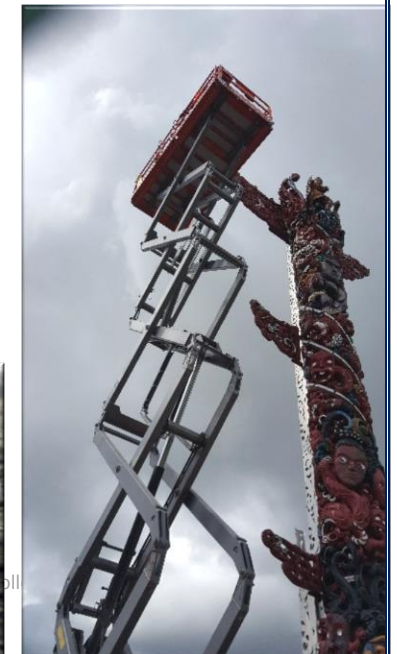
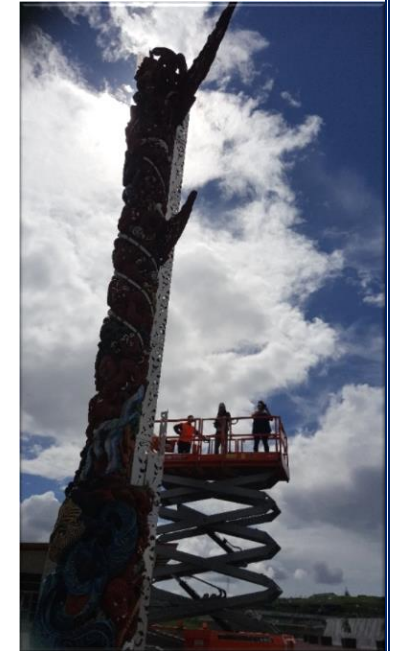
MANA VR CHALLENGE

**Moving the Reality
of Pou Kapua into Virtual Reality**



15000 incredible images
multiple locations
thousands of hours
trail-blazing technologies
countless sleepless nights ...
... and Pou Kapua is reborn
in the Virtual World

Dream ... Do ... Live ...





SENTIO ERGO SUM



I AM POU KAPUA

Conceived in time immemorial by my parents

Ranginui – Sky Father

Papatuanuku – Earth Mother

I grasp in my hand the Baskets of Sacred Knowledge

Ancestral Knowledge, Life Knowledge

The Baskets I entrust to you

To learn, to know, to share

To live in harmony with nature

To live in peace with each other

People of the four winds, near and far



*Using state of the art
3.5D video and
photogrammetry
techniques we create
experiences that
transcends photorealism
into a sense of truly
'being there'*



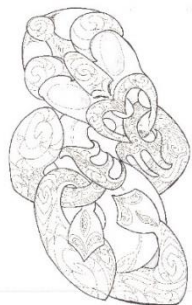
Note: Refer to page 17 for links to VR experiences

Live ...Own ... Love ...



CULTURAL & CREATIVE GENIUS ... HAS NEVER LOOKED SO COOL!

Nurtured with ancestral wisdom,
we are shapeshifters in the cyberflux,
tricksters of technology,
poets, storytellers,
co-creators of new futures ...



Wikuki Kingi
Cultural Symbolologist
Designer, Technologist



Tania Wolfram
Cultural Psychologist
Systems Sculptor

Dr Ella Henry
Business, Education
Media Production

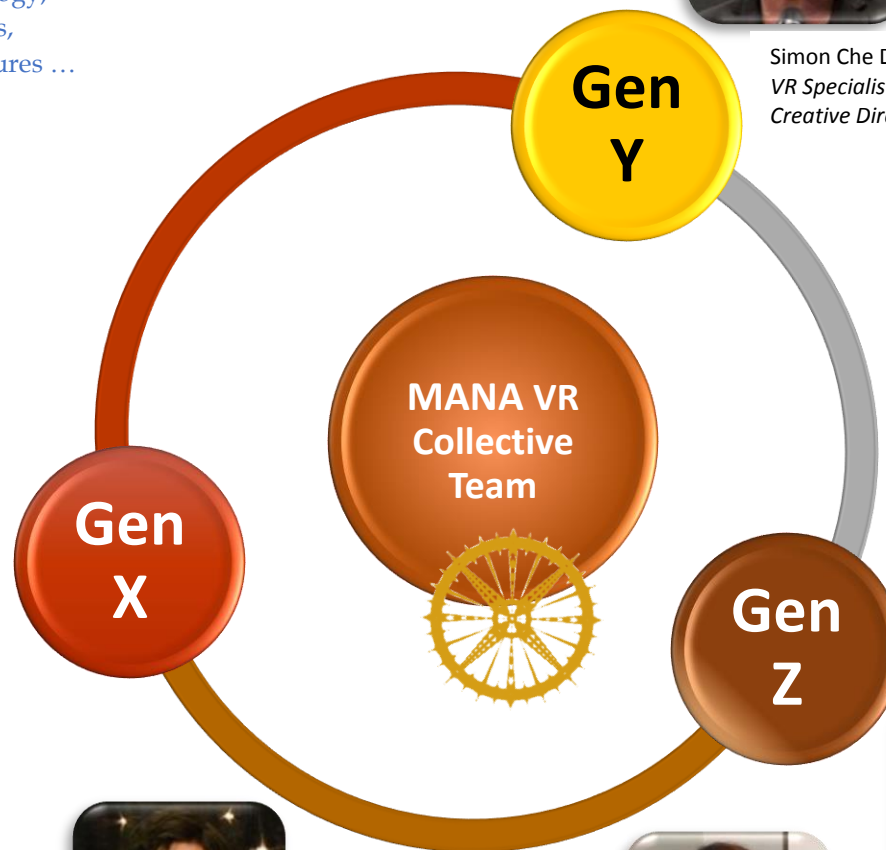


Moka Apiti
GIS Specialist
Geospatial Mapping

Dr Rachel Wolfram
Specialist - International
Business & Sustainability

MANA VR Alliances & Associations

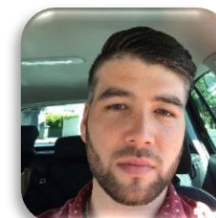
- NZ VRARA
 - TE HA Alliance
 - Native Science Academy
 - Data Sovereignty Network
 - The Cultural Conservancy
 - Indigenous Education Institute
 - Auckland University of Technology
 - University of Auckland School of Business
- Global Alliances in the Virtual Reality / AR / MR Arena
Local Tribes / Communities across NZ / Pacific / Globe



Simon Che De Boer
VR Specialist
Creative Director



Tim Shepherd
Animation Specialist
Gaming Media Design



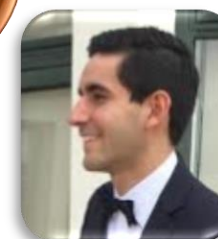
Taron Ah Chee
Drone UAV Pilot
Photogrammetry



Isaac Rolfe
Computer Scientist
Software, Platforms



Rainui Teihotua
Design Specialist
Digital Narration



Vincent Wolfram
Mathematician
Quantum Physics



Ashlin Rolfe
Creative Writer
Law, Pharmacology



Luke Page
Animation, Gaming
Linguistics



Darcy Russell
Beauty, Fashion
Retail Design

Technical Advisors

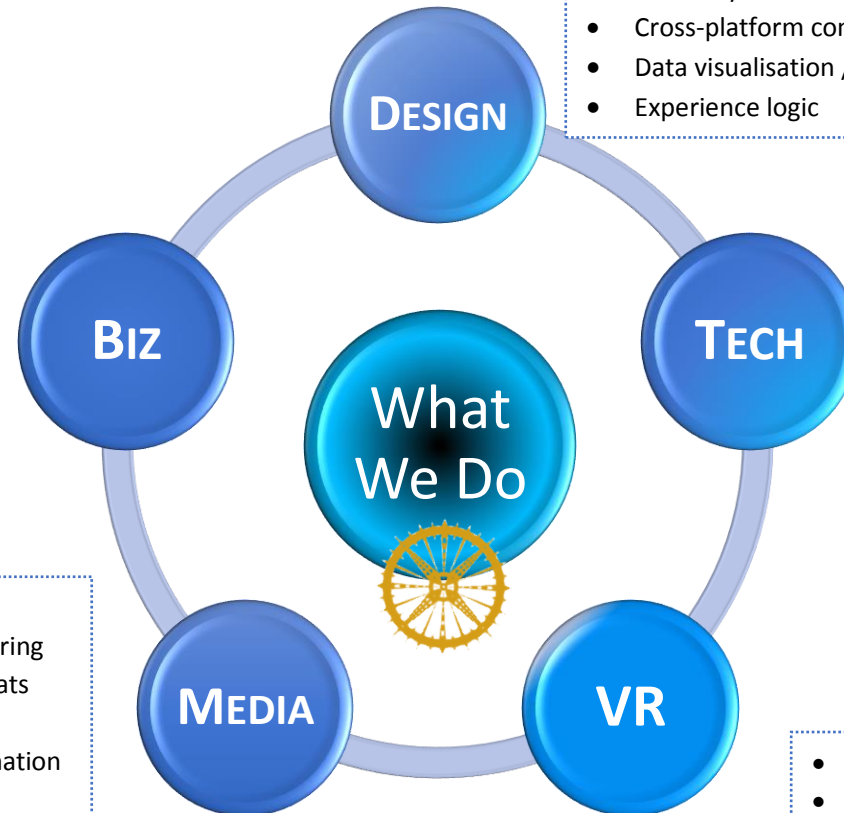
- Dr Vicente Gonzalez, (UoA, Advanced Computing Research)
- Warren Williams (Digital Taniwha, Waikato Uni PhD Res)
- Teriu Lemon (AUT, Creative Industries)



We co-create the best multisensory True VR experiences that can change the way people sense the world - awakening and strengthening their relationships to humanity and to nature ... with a spot of shopping on the way!

- Business & digital strategy
- Product development pipeline
- Interactive services
- Prototyping / proof of concept
- UX, UI, User Research / Analysis
- Digital productisation & monetisation
- Web / Online applications; Streaming
- Dissemination; distribution

- Videography; animation
- Visual and sound engineering
- Scalable to multiple formats
- 360 video production
- Projection mapping; animation
- Editing; post-production
- Performance Measurement
- Optimisation



- Research design, develop, implement
- Full spectrum design methodologies
- VR / Immersive experience design
- Cultural / creative storytelling
- Cross-platform content strategy
- Data visualisation / motion / gaming
- Experience logic

- Computer / data science and analytics
- Data capture, management, integration
- Digital platforms and framework
- VR Pipeline production technology
- Geo-location; SEO and SEM
- Hardware / software development
- Solutions Architecture
- Artificial Intelligence
- DevOps; API development
- Front-end / Back-end / Full-stack Dev

- Virtual / Augmented / Mixed Reality
- 4D Photogrammetry / VFX cinematography
- 3.5D in-motion volumetric capture
- Robotics & Autonomous Operations
- UAV and Drone cinematography
- Tangible & fiducial marker response systems
- CG; GreenScreen; VoiceOver integration
- Motion & gesture responsive systems
- Billions+ dense point cloud data scanning
- Signal Processing; Deep Learning

MANA VR Collective

Integrating VR and digital innovation to create immersive experiences and platforms

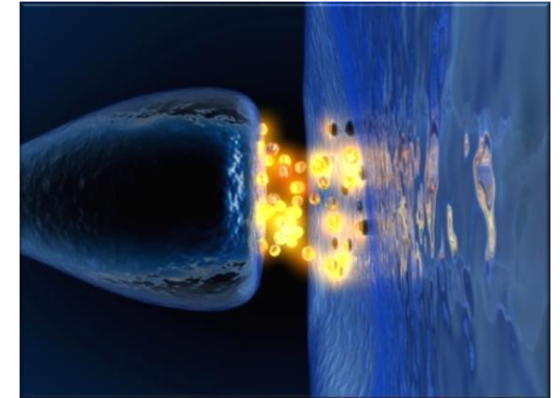
Blueprint



CAPABILITY: DESIGN / RESEARCH

The MANA VR Collective has a track record in digital product research and design, and capabilities across multiple channels/devices including web, mobile, tablet, touchtable, TV screen, and transformative / VR / immersive interactive experiences. Our capabilities include:

- Full spectrum design methodologies
- Immersive experience design – VR, AR, MR
- Cross-platform content strategy and design
- Content design and research
- Data visualisation / motion / animation / gaming design
- Interaction design
- 3D modelling and printing design



The [MANA VR Collective](#), comprising Reality Virtual (RV), IDM Agency (IDM) and Hakamana Ltd has several years of experience working in digital design and have designed and hand crafted immersive digital experiences (including VR in the last few years), platforms, user interfaces, experiences, brands and collateral. Design has included 3D animation, game design, 3D modelling, simulation and design (including work with Autodesk Maya) and home automation PC systems using natural language, as well as user interfaces, websites, platforms and digital experiences. Building on decades of knowledge and skills as creative specialists, artists, and designer, our primary focus continues to be the design development of immersive media technologies.

With a background in brand strategy and web design, we understand the importance of incorporating beautiful design into even the most technical of projects, to ensure seamless user experiences and uptake. With experience and both branding and content development, we also understand the importance of using existing brand stories, assets and narratives consistently and correctly to build ongoing trust and credibility with a target audience. Whether it's working with lifestyle brands such as Mini, industry brands such as Counties Manukau DHB or a number of SME's, we have extensive design experience.

While we are researchers, designers, and developers, we are also Māori / Pacific / Kiwi and have been designers and creators of wonderful taonga / treasures, providing rich and deeply meaningful content and stories for the people of Aotearoa, the Pacific, and the world to experience. Acknowledged as world leaders in the creation of cultural treasures, and building on decades of skills and experience we are moving our creation of incredible cultural content from 3D to 3.5D...4D+



CAPABILITY: TECHNOLOGY DEVELOPMENT / DATA SCIENCE

The [MANA VR Collective](#) has extensive knowledge and experience in data analytics designing metrics to capture behavioural data, as well as data gathering and metrics from other sources, dashboard development, data insights, KPIs, and general analytics using a variety of tools. Our capabilities include:

- Computer / data science and data analytics
- Geo-location – blended physical / digital experience analytics / SEO and SEM
- Front-end development (HTML, HTML5, CSS, JavaScript, BrightSign suite etc)
- Back-end development (Ruby, Python, PHP etc)
- Full-stack development / Cross-platform product development
- Open source/open standards
- Solution architecture: research and development
- DevOps / API development and management
- Mobile and tablet development using open web standards



With a speciality in bespoke online development, API integrations and data management, the [MANA VR Collective](#) has a wealth of knowledge and experience when it comes to capturing, managing, and interacting with data. We have experience both integrating existing data and analytics tool into online solutions, as well as capturing custom data to transform and display back to the user as needed. The Collective has worked extensively with GIS systems (e.g. for environmental scanning); completed comprehensive research and data analytics about geo-location music streaming platform about distributing content using natural language.

We also have a strong emphasis on advanced robotics & autonomous operations for large data acquisition of 3D environments. We have developed our own digital frameworks and platforms based off cutting-edge open source technology so that we're not limited in the online experiences we can create. And we have implemented our own strategically-led workflow method that allows for digital innovation and creativity alongside risk management and mitigation.

Our real strength, [MANA VR](#) with IDM and RV has a history of architecting, designing and developing a diverse range of visually and technically powerful web solutions, platforms and online technologies. We have designed and developed our own digital frameworks and platforms based off cutting-edge open source technology so that we're not limited in the online experiences we can create. We have implemented our own strategically-led workflow method that allows for digital innovation and creativity alongside risk management and mitigation. From forensic accounting for sporting institutes through to managing data for lifestyle brands such as Pump or managing hundreds of thousands of products and integrating artificial intelligence for companies such as Real Groovy, we can manage and streamline the most complex of datasets.



CAPABILITY: VIRTUAL REALITY - IMMERSIVE EXPERIENCES

The **MANA VR Collective** has streamlined the process of asset and environmental capture, delivering ultra-realistic real-time CG experiences, combined with the ability to create a range of online experiences. Our photogrammetry to virtual reality pipeline has been perfected into an art. We are effectively encapsulating reality in all of its visual nuance, creating nothing short of a 'being there' sensation for real-time VR applications. This process is a godsend for digital storytelling, VFX cinematography productions, innovative viral marketing strategies & end-user experiences alike. Our capabilities, experience, and points of difference include:

- VR development and production
- 4D Photogrammetry / VFX cinematography
- Motion and gesture responsive systems
- Tangible and fiducial marker response systems
- Experience and interaction design for blended physical and digital experiences
- Motion graphics / Photogrammetry / UAV / Drone / 3D scanning
- CG; GreenScreen; VoiceOver integration
- Wearable audio, visual, and haptic devices development
- 6° of movement 'true VR' cinematography - photo-realistic 3D asset & environment acquisition for VFX / VR / Desktop / Mobile & Web applications.
- 3.5D Volumetric human performance capture at a commercially acceptable compression ratio for rapid successive content creation.
- In-motion time-lapse techniques, FPV (first person view), head tracking stereoscopic 360° cinematic capture, in-motion 4D photogrammetry techniques and virtual reality (VR) cinematography / simulations.



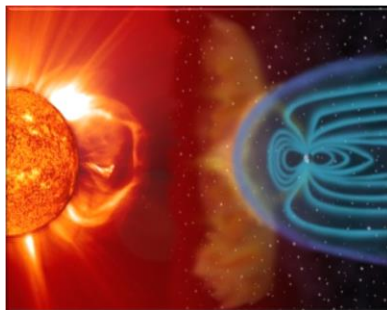
Unique post production & signal processing techniques including the development of Deep Learning image enhancement and automation throughout our 3D pipeline for PBR workflow. Strong emphasis on advanced robotics & autonomous operations for large data acquisition of 3D environments. Our technology delivers the ability to get far more intimate with assets and environments in virtual reality and online experiences than you ever could in the real world - lean right in and admire every nuance and every paint stroke in your own personal universe, or engage in a number of digital experiences. From a real-world environment, to billions plus dense point cloud data scan, to an oculus rift streaming at 90fps our workflow / pipeline retains all the intricacies of the original scene. With 3.5D in-motion volumetric capture, we can encapsulate a natural feeling human performance.

When paired up with our photo-realistic environmental scans, combined with our experience for digital storytelling, we are able to create incredible user journeys and experiences using VR, AR, digital innovation and online development. We can incorporate any VR, AR, video and imagery, sound and linguistic elements into our bespoke platforms and websites. Photogrammetry partnered with Deep Learning is another avenue we strongly focus on. For our Collective it's all about signal processing, AI enhanced super resolution, and procedural photogrammetry., industry typology surveying utilizing ground station way point navigation, HDR video – the latest technology utilised and integrated to bring the best VR to the world.



CAPABILITY: MEDIA PRODUCTION

MANA VR has extensive experience in producing compelling stories in multiple locations and channels, timely production and post-production services, with high production values. Our capabilities include:



- Videography / Animation
- Editing / colour-grading / post-production
- Public digital experience design / production
- 360 video production
- Projection mapping
- Sound design and composition
- Sound recording / engineering / subtitling / transcription

MANA VR have worked extensively with videography, animation, visual and sound design, with core members being sound engineers and specialists. Diversity across video production outputs is integral to many of the projects undertaken by IDM. The Collective includes Reality Virtual whose ultra-realistic 3D capture of pristine artwork with UAV and ground-level based photogrammetry of assets & environments of significance is their expertise. Digital cultural preservation of indigenous communities and heritage sites, nostalgia, captivating VR storytelling and engaging online journeys of times past, interactive experiences, gaming or typology surveying.

MANA VR through Reality Virtual have also streamlined our ultra-realistic photogrammetry to virtual reality pipeline into an art, with a focus on: 6° of movement 'true VR' cinematography - photo-realistic 3D asset and environment acquisition for the purposes of VFX / VR / Desktop / Mobile & Web based applications; 3.5D Volumetric human performance capture at a commercially acceptable compression ratio for rapid successive content creation; unique post production and signal processing techniques including the development of deep learning image enhancement & automation throughout their 3D pipeline for PBR workflow; virtual reality, mixed reality, augmented reality; applications for immersive media technologies. These are scalable (e.g. back to 360° video production).

MANA VR through IDM has also developed a bespoke web framework built on top of the open-source laravel platform so that we are able to truly customise all aspects of a website or online application, and have also developed our own project management process that combines creativity with risk management to guarantee results. Our projects have included international project management platforms for groups such as Oceania Football Confederation working with Unicef, bespoke E-Commerce solutions for brands such as Real Groovy and Innocent Packaging, lifestyle digital experiences for brands such as Pump and Mini, membership platforms, websites and membership experiences for companies such as Auckland Badminton and Motivate Me, to name a few. We have also integrated hardware API's into our web projects to break down the barrier between digital technology and real-life experience.



CAPABILITY: BUSINESS – STRATEGY / DEVELOPMENT / TRANSFORMATION

Team Members of the [MANA VR Collective](#) also have degrees in Commerce, Business, Management, Design Processes, R & D Methodologies, and Computer Science. They are strategists, entrepreneurs, with extensive skills and experience design thinking, lean, and agile methodologies. Tania is also the founding member of the Aotearoa New Zealand Evaluation Association and evaluation specialist. With business strategy and digital strategy at the core to IDM's approach to digital innovation, IDM's strength in digital productization, digital monetization, digital strategy and business have supported the ongoing success of their bespoke digital projects, and set a foundation for success with [MANA VR](#). Reality Virtual also brings 15 years of experience as a leading-edge technologist, is an expert in visual capture and photogrammetry and VR design and development. They also bring several years of experience with games concept, design, and development.



The [MANA VR Collective](#) have a good track record in digital product and services capability across multiple channels/devices including web, mobile, tablet, TV screen, or transformative or immersive interactive experiences. Rapid prototyping, iteration, testing, openness, modularity, usability, personalisation, sustainability and flexibility are important factors for our digital products. Having worked with a range of companies on digital innovation from start-ups to existing incumbents, IDM have many years' experience working with agile business models and agile development approaches, prototyping, MVP demos, and more. Our capabilities include the following:



- Business and digital strategy
- VR and Platform Product development pipeline
- UX, UI, User Research / analysis
- Prototyping and proofs of concept
- Web / Online applications; Streaming
- Dissemination / distribution

[MANA VR](#) has extensive experience working with museums, including curating at Waikato Museum, designing and developing both permanent (e.g. Te Winika Gallery) and temporary exhibitions events. We have worked with the Auckland War Memorial Museum and

Te Papa, and continue to connect with museums internationally through our global alliances (e.g. Native Science Academy, International Education Institute, TE HA Alliance, Exploratorium CA). Strengths of [MANA VR](#) also include unique post production & signal processing techniques including the development of deep learning image enhancement & automation throughout our 3D pipeline for PBR workflow; development of our own digital frameworks and platforms based off cutting-edge open source technology so that we're not limited in the online experiences we can create; and implementation of our own strategically-led workflow method that allows for digital innovation and creativity alongside risk management and mitigation.

be there ... before you get there ...





MANA / Pou Kapua in VR is our latest offering of a brand-new method of digital storytelling that utilizes the power of virtual reality and digital innovation to allow us to preserve the culture, communities, nostalgia and captivating tales of times past.

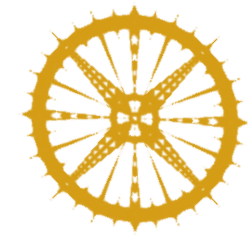
MANA / Pou Kapua in VR was showcased by NVIDIA at GDC 2017
<https://www.facebook.com/realityvirtual.co/videos/776808995807878/>
<https://www.facebook.com/realityvirtual.co/videos/777018969120214/>

See <http://www.realityvirtual.co/> for VR Experiences

- ∞ MANA / Pou Kapua in VR
- ∞ High Above Auckland Skyline (Sky Tower Auckland)
- ∞ St Matthews in the City (St Matthews Cathedral)
- ∞ Wallace Trust Art Collection

See also
<http://poukapua.com/>

For further information, visit
<http://hakamana.com/>
<http://idesignmedia.co.nz/>



The Star Compass of the MANA VR Collective is an instrument born of the ancient voyaging traditions of the people of the great Pacific Ocean.

The Star Compass helps us to navigate across vast oceans to distant horizons. The MANA VR Collective invites you to journey with us as Wayfinders – as we co-create future realities.

MANA VR Collective Contacts

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SENTIO ERGO SUM
I FEEL THEREFORE I AM