

Hoahoanga Rēhita Rangatira mō ngā Tūāpapa ā-Hapori

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Pepa A · Tuhi arotake putanga 4, Mei 2026 | Ngā reo: EN · DE · MI

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E whakamanahia ana ngā urupare whai kiko mō ngā wāhanga motuhake. Tēnā, whakahuatia ngā tau wāhanga (hei tauira §6.10) kia taea ai te whai i ngā whakatikatika. Ka whakautu ā-tinana te kaituhi; tukuna kia kotahi ki te rua wiki. Kei te wātea te pepa i te reo Ingarihi, te reo Māori, me te reo Tiamana (ngā hononga kei runga ake). He reo Ingarihi anake te whakaaturanga ā-slide i tēnei wā; ka whai ake ngā whakaaturanga ā-slide kua whakamāoritia i te wāhanga kaitono-tuku v4.

Hoahoa Pūnaha Rēkoata Rangatiratanga mō ngā Tūāpapa ā-Hapori

Takenga whakamunatanga, whakatinanatanga kaupapa here e herea ana ki te kaipā, kotahitanga ā-taha e rua, me te kawē rangatiratanga e ārahi ana ngā mema mō ngā hanganga hapori kāore i raro i ngā kaiwhakarato matua.

John G. Stroh

2026-05-03

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Hoahoa Pūnaha Rēhita Rangatōpū mō ngā Pūtorino ā-Hapori

Whakarāpopototanga

Ko te papaanga taunoa ā-hapori e puritia ana e tētahi kamupene o Amerika, e tū ana i runga i ngā hanganga e whakahaerehia ana e Amerika, e whiwhi moni ana mā te tango aro, ā, e whakahaerehia ana e ngā tikanga ka taea e te kaiwhakahaere te whakarerekē kotahi noa. Ehara i te mea nā te whakaaetanga o ngā hapori i whiriwhiria ai te whānuitanga o tēnei taunoa, i a rātou e aromatawai ana i ētahi atu kōwhiringa; he hua kē tēnei nō te neke atu i te tekau tau o te haumi pakihi toitū ki te āhua o ngā tūmanako a ngā kaiwhakamahahi, ki ngā pūnaha here ā-whatunga, me te anga kōrero tūmatanui e whakaheke ana i ētahi atu kōwhiringa kia kore e whai hua, kia kore rānei e kitea. Ka mau tonu ēnei tikanga i runga i te mana mutunga kore ahakoa kāore te hapori i whakaae, ā, ka puta noa iho hei hapa e kitea ana i ētahi wā anake — he pūkete kua raka, he pou kua tangohia, he ratonga kua katia me te kore whakamōhiotanga, he whakarerekētanga ki ngā tikanga ratonga e hē ana ki ngā hiahia o te hapori. Ki ētahi hapori — ngā hapori Māori e pupuri ana i ngā taonga, ngā hapori reo iti *ko* te reo *tō rātou ihirangi*, ngā rōpū hītori whānau e pupuri ana i ngā rekoata mō ngā tāngata ora kua ingoa, me ngā hapori katoa kāore tō rātou āhua noho e taea te whakaiti ki tētahi taonga kōtaha — ehara ēnei tikanga i te raruraru e taea te manawanui; he ārai hanganga ēnei ki ngā mahi e tū ana te hapori hei mahi. E pūrongo ana tēnei pepa i tētahi **hanganga rēhita rangatiratanga** — he turanga kē e whakamana ana te rangatiratanga, ā, ko ngā hiahia o te hapori he āhuatanga nō ngā rēhita anō, ehara i ngā tuku āwhina ka taea e te kaiwhakahaere te whakakore.

Ka kawea e ia rēkōta ihirangi i roto i te pūnaha tōna ake takenga mai, tōna ake kaupapa here uru, tōna ake tohu whakamunatanga, me tētahi mekameka kriptorāpiti o ia rohe whakahaere kua whakawhitia e ia. Mā te pānui ka whakapuaki i tēnei āhua ki ngā kaiwhakamahahi; mā te tuhi ka tāpiri atu ki reira; mā te muku ka tohu hei tohu urupā. Ko te kotahitanga i waenga i ngā kaipāpā rangatira he takirua, he herea hoki — ka whakaae ngā hapori e rua, i runga i ngā tikanga ka tautuhia e rātou, ki tētahi whakawhitinga motuhake anake. He tangata raraunga tuatahi-ā-tika ngā mema i raro i te anga whakahaere e pā ana ki a rātou: ka taea e ia te kawewe i te kohinga katoa o ngā pūrongo e puta ana tō rātou ingoa ki roto, i roto i tētahi āhua ka taea te whakamana mā te kīhipa, ā, ka taea hoki e ia te whakawhiti ki tētahi atu kaipāpā e whakahaere ana i raro i taua taura hanganga kotahi. He mata kōrero ārahi — he rārangi tuhi

a ngā kaiwhakahaere kua whakaaetia, he kuaha tuhi-me-whakaputa, kāore he whakaputa aunoa, kāore he karere ki waho — e whakawhānui ana i te atanga kaiwhakahaere pānui-anake mō te mana whakahaere ki te mana whakahaere whai wāhanga, me te kore e tuku i te tikanga ārahi.

Ka whakahaerehia te hanganga i te taumata whakaputa i runga i ngā hanganga motuhake o te EU (OVH France) me Aotearoa (Catalyst Cloud). Kei te hanga tētahi whakaritenga waka-tāpiri hei whakaurunga tuatahi mō te hononga ā-tāupānga maha kua whakaarohia. Ka tukuna te hanganga hononga ā-rua i te mutunga ki te mutunga me tētahi rārangi whakamātautau-kore e whānui ana, e kapi ana i ngā pānui ā-rohe, te aukati tuhi ā-rōpū, te oti o ngā rangitaki arotake, te tikanga tohutoro, te whanonga penapena/kore-tau, ngā āhua raraunga ā-taha, te whakatinana i ngā rohe whakaaetanga, me te whakatau tautohe ingoa-ā-wāhi; kei te tatari tonu ngā hononga hononga ora i waenga i ngā rōpū motuhake mō te whakahoatanga tuatahi o te waka-rua-maha.

Kua hoahoatia te hanganga hei whakatutuki i ngā mahi whakahaere a Te Tiriti mō ngā pūnaha AI e whakamahi ana, e whakaputa rānei i ngā raraunga Māori, e hāngai ana ki ngā mātāpono whakahau o te Kaupapa Māori AI a Dr Taiuru [25b] (te whakaaetanga a te Māori + te rangatiratanga raraunga mō ngā rauemi whakangungu + te haepapa mekameka-whānui). Ko te pātai whānui ake e whakatakotoria ana e Dr Taiuru [25a] mō te tangata ā-ture mō ngā māngai AI i hangaia e te mātauranga Māori, he wāhanga nō te rohe rangahau o te pepa hoa (Pepa B — Ngā Papanga Reo ā-Tūnga, he whakarāpopototanga o te pepa rangahau hoa, kua whakaputaina) ā, ka whakautua i reira, ehara i roto i tēnei pepa. He anga mō te wā whakawhanake (Tractatus, Apache 2.0) e tuhi ana i ngā whakawhitihiti whakaaro hanganga i whakaputa i tēnei hoahoa; ko te pukapuka pūrongo mau tonu he wāhanga o te mata arotake. Ko te papanga i hangaia e tētahi rōpū iti i Aotearoa, kāore he pūtea tūhono. He whakautu hoahoanga tēnei ki te pātai me pēhea e whakahē ai te hanganga hapori i ngā tikanga o te rangatiratanga taunoa o ngā papaanga o Amerika, me te kore e huri whakamuri i ngā mahi e mahia ana e taua hanganga mō ngā hapori e whakawhiwhia ana e ia.

Ngā kupu matua: rangatiratanga raraunga, wehewehenga kaiwhakamahi, takenga whakamunatanga, kotahitanga ā-taha e rua, mana o te tangata raraunga, kawē rangatira, Te Tiriti o Waitangi, tangata AI, kaitiakitanga, tuku iho kaupapa here, EUPL-1.2, Ngā Mātāpono CARE, Tuhinga 15 o te GDPR, Hononga Haumarutanga Rohe Kua Whakarei, Ture CLOUD, tohu tuakiri kore-pokapū.

1. Whakataki

Ko te tūāpapa taunoa ā-hapori he tauira SaaS e puritia ana e tētahi hinonga o Amerika, e tū ana i runga i ngā hanganga e whakahaerehia ana e Amerika, e whiwhi moni ana mā te tango aro, ā, e whakahaerehia ana e ngā tikanga ka

taea e te kaiwhakahaere te whakarerekē kotahi noa. Ehara te whānuitanga o te taunoa i te hua o tētahi whakaaetanga i runga i ngā uara i whakaaetia e ngā kaiwhakamahi takitahi, e ngā hapori rānei i te aromātai i ētahi atu kōwhiringa. He hua nō te neke atu i te tekau tau o te haumi pakihi toitū ki te āhua o ngā tūmanako a ngā kaiwhakamahi, ki ngā pūnaha here i raro i te pānga whatunga, me te anga e whakaatu ana i ērā atu whakaritenga hei mea kāore e taea, he mea huna rānei. Ka mau tonu ēnei tikanga i te mana mutunga kore ahakoa kāore te hapori i whakaae, ā, ka puta ake hei hapa mārama i ētahi wā anake — he pūketete kua raka, he pou kua tangohia, he ratonga kua katia me te kore whakamōhiotanga, he whakarerekētanga ki ngā tikanga ratonga e hē ana ki ngā hiahia o te hapori — i te wā e mau tonu ana te whakaaetanga taketake i te mana mutunga kore. Ki ētahi hapori — ngā hapori Māori e whakahaere ana i raro i ngā herenga o Te Tiriti, ngā rōpū ngaio e mau ana ā rātou mema i ngā rauemi tūmataiti, ngā rōpū hītori whānau e pupuri ana i ngā rekoata mō ngā tāngata ora kua ingoa, ngā rōpū tiaki taiao e matatini ana ā rātou raraunga wāhi, ngā whatunga paroihi, ngā kotahitanga hākinakina, ngā hapori reo iti, me ētahi atu kāore e taea te whakakapi i tō rātou āhua noho ki tētahi kōtaha kāore e taea te whakaae — kāore e taea te manawanui ki ngā tikanga taketake: he ārai hanganga ēnei ki ngā mahi e tū ana te hapori hei whakatutuki.

I tuhia tēnei pepa mō ēnei hapori — me te whānuitanga o ngā rōpū whakahaere iti e whakaaturia ana e rātou: ngā rōpū whakahaere e mau ana i ngā pārongo tūmataiti mō ngā hanganga kei waho i tō rātou mana whakahaere, i runga i ngā tikanga ka taea anake e te kaiwhakahaere te whakarerekē.

E toru ngā pēhanga e hono ana mō ēnei hapori.

Ko te tuatahi he **take mana whakahaere**. Ka whakawhānui te CLOUD Act (2018) [9] i te mana whakahau a te US ki ngā kaiwhakarato kapua e te US ngā rangatira puta noa i te ao, ahakoa kei hea te tangata e pā ana ngā raraunga e noho ana. Ko ngā whakawhitinga kōrero mō te Hononga Whakakaha Haumarutanga Rohe (EBSP), e matapaki ana ināianei e te iwi whānui i Aotearoa [13][14], e herea ana ki te haere tonu ki te Hōtaka Tukuna Visa o Amerika, ā, he rā whakamutunga kua whakaritea mō ngā whenua e whakawhiti kōrero ana [13][14][15], ā, e whakaaro ana ki te whakawhānui i te uru ki ngā raraunga, tae atu ki ngā raraunga ā-tinana (biometric) me ētahi atu pārongo tuakiri [16][17]. E ai ki tētahi kōrero ture nō Te Whare Wānanga o Auckland [18], e whakaatu ana ngā tuhinga a te Tari Haumarutanga ā-Motu o Amerika (US Department of Homeland Security) e nuku atu ana ngā whakaritenga o te EBSP i ngā whakawhitinga e hāngai ana ki ia take i raro i ngā kirimana o nāianei mō ngā Rēhita Ingoa Manuhiri (PNR), ā, ka ara ake te āheinga kia uru tika ki ngā pātengi raraunga. Kua whakapuaki āwangawanga a Te Pūtake Tūmataitinga o Aotearoa (Privacy Foundation New Zealand) mō te mārama me ngā ārai haumaruru [19]. Ehara te rangatiratanga i tēnei horopaki i te kupu hokohoko: he pātai tēnei mō te tukanga a tēhea kāwanatanga e taea ai te whakahau i te whakapuakitanga, i runga i tēhea marau wā, me te pānui pēhea ki te hapori e pā ana ngā raraunga e whakapuaki ana.

Ko te tuarua he **mea whakahaere ture**. Ko Te Tiriti o Waitangi (te Tiriti o te tau 1840 i waenga i te Karauna me ngā Māori), te Ture AI o te EU [6], ngā Tuhinga 9 me te 15 o te GDPR [8], me te Ture Rangatiratanga Pāpāho o Europi [7] e whakawhiwhi ana ia i ngā herenga ki ngā hanganga raraunga hapori e uaua ana, e kore rānei e taea te whakatutuki mā te tuku mana. Kāore e taea e tētahi kaiwhakahaere papanga te whakaatu ko tēhea tauira i aromatawai i ngā ihirangi a tēhea mema, i raro i ngā kaupapa here i tuhia e te hapori, me te whakatau i mahia; kāore hoki e taea e ia te whakautu i ngā herenga e kīia ana e ēnei taputapu. Kāore e taea e tētahi papanga te tuku ki tētahi mema, i te wā e tonoa ana, te kohinga katoa o ngā rekoata i tuhia e te mema i roto i tētahi āhua ka taea te whakamana; kāore hoki e taea e ia te whakatutuki i te tika ki te uru i te Wāhanga 15 o te GDPR. Kei mua i ngā hapori e whakahaere ana i raro i Te Tiriti he herenga ōrite i raro i te Tuhinga 2 — rangatiratanga ki ngā taonga — arā, me tautoko tūturu e tētahi hanganga, kua e whakapuaki noa iho.

Ko te tuatoru he **mea hangarau**. Ka whakaterere te pūnaha AI hokohoko i ngā whakamātautau mā ngā kaiwhakarato hanganga iti o Amerika, ā, ka whakaarohia ngā ihirangi o ia hapori hei rauemi whakangungu pea. Mō ngā hapori kāore e taea te whakakotahi i ā rātou kupu, tikanga whakahaere, rauemi tapu rānei ki roto i tētahi kohinga ā-ao me te kore kino — ā, ka takahia ngā herenga o Te Tiriti, o ngā Mātāpono CARE rānei e taua whakakotahitanga — kāore e taea te whakamahi i te pūnaha hokohoko.

E pūrongo ana tēnei pepa i tētahi whakautu hanganga. He mārama, he tūturu te ū ki te kaupapa matua: ia rēkōta ihirangi ka kawē i tōna ake takenga mai, tōna ake kaupapa here uru, me tētahi mekameka whakamunatanga o ia rohe whakahaere kua whakawhitia e ia. Mā te pānui ka whakaatuhia tēnei tūnga ki ngā kaiwhakamahi; mā te tuhi ka tāpirihia atu ki a ia; mā te muku ka tohu i tōna mutunga. Kei te whakamahia tēnei hanganga i te wā tūturu puta noa i ngā whakaritenga āhua-kāinga maha i runga i ngā hanganga rangatiratanga o te EU me Aotearoa. Kua oti tēnei mahi me te kore pūtea haumi, i runga i te tahua o tētahi tīma iti, nā tētahi kamupene tūmataiti nō Aotearoa, mā te whakamahi i tētahi anga whakahaere mō te wā whakawhanake (Tractatus) e tuhi ana i āna ake whakataunga hanganga i te haere.

Ko te whakarōpūtanga o te pepa e pērā ana. Ka whakatūria e §2 te papamuri — te anga whakahaere i te wā whakawhanake, te anga o Te Tiriti me ngā Mātāpono CARE mō te rangatiratanga raraunga taketake (me Dr te kōrero rārangi-rua a Taiuru (2026) mō ngā herenga o Te Tiriti me te pātai tuwhera mō te tangata-ā-ture o ngā māngai AI i matapakihia i §3.6), te whakamārama whakahaere o *ngā rekoata rangatira*, te anga ā-rua mō te kotahitanga, me te anga mema-hei-tūemi-raraunga mō te kawē rangatira. §3 e tū ana te mahi ki ngā tuhinga tata, tae atu ki te whai wāhi ki te kōrero a Dr Taiuru i whakahua hei tuhinga kua whakaputaina. Ka whakamana a §4 i te tauira whakatumatuma me ngā hoariri ingoa me ngā kianga ka taea te whakamātautau. Ka kī a §5 i ngā mātāpono hoahoa. Ka pūrongo a §6 i te whakatinanatanga hanganga. Ka pūrongo a §7

i te whakaurunga o te kotahitanga ki te whakaputanga. Ka pūrongo a §8 i te kawē rangatiratanga. Ka pūrongo a §9 i te atanga whakahaere mō ngā kaiwhai pānga, tae atu ki te mata kōrero ā-whaipānga ā-takiwā i tukuna i te Wāhanga-6. §10 e whakaatu ana i tētahi tauira mahi mō te whakawhitinga rangatiratanga ingoa ā-rohe-whakawhānui i waenga i ngā wāhanga reo e rua kua whakaritea. §11 e tirotiro ana i ngā whirihoranga momo-kāinga. §12 e pūrongo ana i te arotakenga. §13 e whakamārama ana i te tū ā-puna tuwhera. §14 e kī ana i te koha hoahoanga. §15 e ingoa ana i ngā mea kāore anō i mahia e te hoahoanga.

2. Papamuri

2.1 Te anga Tractatus

Ko te anga Tractatus, he kaupapa rangahau motuhake nā taua kaituhi anō, te pūnaha whakahaere i te wā whakawhanake hei hanga, hei whakahaere i te papa. Kei roto i te anga he kohinga tauira hanganga me ngā ratonga waehera mō te whakahaere AI i te wā whakawhanake — arā, ko ngā ratonga e urutau ana ki ngā whakataunga a tētahi kaiāwhina waehera AI i ngā wā kōwhiri hanganga. He puna tuwhera te anga i raro i te raihana Apache 2.0, ā, ka tohaina ki te marea [icodberg.org/mysovereignty/tractatus-framework](https://creativecommons.org/mysovereignty/tractatus-framework) [1]. He pepa mahi e tuhi ana i ngā kitenga tirohanga a te anga me ngā tauira hanganga e whakamana ana ia; kua ripoatatia ngā tatauranga motuhake i roto i te pepa mahi, kāore i whakahuatia anō i konei.

Ko Tractatus he whakahaere *i te wā whakawhanake*: ka ārahi ia i te waehera pūtake me ngā kōwhiringa hanganga o te tūāpapa, ehara i āna tonu i te wā whakahaere. Ka uiui te tūāpapa ki te anga i ngā wā whakatau hanganga, ā, ka mau ia uiuitanga hei rēhita i roto i te pātengi raraunga o te tūāpapa; ka penapenahia ngā uiuitanga mā te tuakiri whakahōu, te ratonga, te rārangi tikanga, me te whakataunga PASS/FAIL. Ko te tikanga o te tuhi i te uiui — i runga i te kotahitanga ki ngā pātengi raraunga whakaputa ā-rohe, ā-rangatiratanga EU, ā-rangatiratanga NZ, ā, mā ngā tuhinga aunoa mō ia whakataunga — koinei te koha; ka taea e tētahi kaipānui ā muri ake te pātai he aha ngā tikanga i arohia e tētahi whakataunga hoahoanga motuhake, ā, kei roto i te pātengi raraunga te whakautu, ehara i te tuhinga.

He mea nui te wehewehe. Ko Tractatus te anga. Ko te papa tētahi o āna whakamahinga. E pūrongo ana tēnei pepa mō te papa; kua whakahuatia te anga hei whakakī i ngā kōrero, nā te mea ka whakamahia e te pūtake waehera o te papa hei tohutohu i ia wāhanga whakatau hanganga.

2.2 Te Tiriti o Waitangi me te rangatiratanga raraunga taketake

Ko Te Tiriti o Waitangi, te Tiriti o te tau 1840 i waenga i te Karauna Piritene me ngā iwi Māori, he ture tūtohu matua o Aotearoa. Ko āna tuhinga e toru — e whakaae ana ki te rangatiratanga ā-iwi mō ngā taonga (ngā mea taonga),

te mana whakahaere a te Karauna, me te օritetanga o te mana whenua — e whakarite ana i ngā herenga o nāianeī mō ngā raraunga. Ko te pūrongo a te Kōti Waitangi WAI 262[5] me ngā *Mātāpono CARE mō ngā Raraunga Taketake Ko te Whakahaere* [4] he whakamārama whānui e tohu ana i ngā tikanga e tohu ana ēnei herenga mō te hanganga raraunga hapori. Ehara ngā mātāpono CARE — Painga ā-Rōpū, Mana Whakahaere, Haepapa, Tikanga — i te rite ki ngā mātāpono FAIR mō ngā raraunga tuwhera; e noho tahi ana rātou, ā, ka whai mana ake rātou i ngā wā ka raru ngā mātāpono e rua.

He pūrongo hou ake a Te Tari Whakawā, WAI 2522 [13a], i whakawhānui i te tātaritanga ki ngā taputapu ōhanga ā-ao — te uiuitanga mō te Trans-Pacific Partnership, te Whakaaetanga Whakawhitiwhiti Kōrero, me te whakatinanatanga o ēnei taputapu mā te Manatū Aorere me te Tauhokohoko. Ko ngā whakatau a te Turehā i roto i te WAI 2522, me te mahi a Ngā Toki Whakarururanga hei waka whakawhanaungatanga Māori-Kāwanatanga, ka whakakaha ake i te herenga: he Kāwanatanga e whakaatu ana i ngā raraunga Māori ki tētahi mana whakahaere ā-ture o tāwāhi — mā ngā aukatinga mō te whakarōpū raraunga ā-rohe i roto i ngā kirimana tauhokohoko, mā te whakaaturanga i raro i te Ture CLOUD, mā te Hononga Haumarutanga Rohe Kua Whakarei e whakaaro ana kia uru tika ki ngā pātengi raraunga — kāore e taea te whakatutuki i te tiaki o te taonga i raro i te Tuhinga 2 mēnā kāore te hanganga anake e aukati i tērā whakaaturanga. Ko te rangatiratanga hanganga anake te rangatiratanga ka ora i te arotakenga o te Tuhinga 2 i te wā ka waihangatia e ngā herenga kirimana a te Karauna ōna ake ngā huarahi kaweake.

Mō ngā hapori Māori e whakapuaki ana i ō rātou mana i raro i Te Tiriti, me āhei tētahi tūāpapa hapori kia puritia e rātou ā rātou raraunga ki runga i ngā hanganga ka taea e rātou te arotake, e whakahaerehia ana i runga i ā rātou tikanga, ā, kāore he huarahi kia uru atu tētahi hapori ki ngā raraunga o tētahi atu — tae atu ki te kaiwhakahaere o te tūāpapa. Ka whakautu tika te hanganga ki tēnei: ko te wehewehe kiritaki te pūtake matua, ehara i te āhuatanga. Kāore e taea e tētahi kaiwhakahaere papanga, me tōna uru ki ngā raraunga o ia kaipāpā ki te taumata ihirangi, te whakatutuki i te herenga o ngā mātāpono CARE ki te *Mana Whakahaere*.

Kua whakaputa whānuitia a Tākuta Karaitiana Taiuru (Ngāi Tahu, Ngāti Kahungunu) i ngā tuhinga mō ngā tikanga hangarau Māori, te rangatiratanga raraunga taketake, ngā tikanga AI, me ngā mana matihiko; kei te wātea āna mahi i taiuru.co.nz. I whakangungua te paparanga reo ā-hapori o te Village e rere ana i runga i te papanga i whakahuatia nei, i runga i ngā anga i whakaputaina e Tākuta Taiuru, me tana whakaaetanga, me te whakahua. Ko te whānuitanga o ngā mahi a Dr Taiuru mō te whakahaere AI Māori te tohu tūāpapa mō te tū o tēnei pepa. Ko tana Kaupapa Māori AI Framework [25b] (Poutū-te-rangi 2026), i whakapuaki i roto i te whakatauāki *He Tangata, He Karetao, He Atārangi* (he tangata, he pūpeti, he atarangi), e tohu ana i te whakaaetanga Māori me te rangatiratanga raraunga mō te mātauranga

e whakamahia ana i te whakangungu AI, me te kawenga-ā-roto-katoa puta noa i ngā kaihanga, ngā kaiwhakahaere, me ngā kaiwhakauru, hei tikanga e hiahiatia ana, e ū ana ki Te Tiriti me te UN Kāhui mō ngā Tika o ngā Iwi Taketake. Ko ngā pūtake hanganga e pūrongo ana tēnei pepa i hoahoatia hei whakatutuki i ēnā tikanga e hiahiatia ana. Ko te uiuitanga hou ake a Dr Taiuru [25a] e whakatakoto ana, motuhake, i te pātai tuwhera mēnā, ā i raro i ngā āhuatanga hea, ka taea te whakawhānui i te tuakiritanga ā-ture ki ngā māngai AI i hangaia mā te mātauranga Māori — e hāngai ana ki te kitenga o WAI 2522 e mea ana he taonga ngā raraunga Māori, ā ki te tauira o ngā ture tuakiritanga ā-ture e toru mō ngā āhuatanga taiao (Te Urewera 2014; Te Awa Tupua 2017; Te Kāhui Tupua 2025) — he uiui e whakaroa ana ia kia mahi ngātahi ngā kaiwhakawhanake AI, ngā tari kāwanatanga, me ngā hapori Māori. Ko te uiuitanga mō te tangata ā-ture e hāngai ana ki te rohe rangahau ā-tinana o te Pepa B hoa (he whakarāpopototanga o te pepa rangahau ā-tinana hoa, kua whakaputaina), kei reira e whakamārama ana te tauira hanganga paparanga-reo ā-horopaki me ngā mātāpono whakahaere, ā, kei reira hoki ka pūrongo te pepa rangahau ā-tinana katoa i te tikanga whakangungu rōpū i ngā taipitopito ka whakamahia e ngā hononga mahi tahi ā-rōpū ā muri ake nei (tae atu ki te Tikanga Whakamātautau a Mead); kāore tēnei pepa e whakamua i taua mahi.

Kāore te hanganga e whakaarohia ana mō ngā hapori Māori motuhake. Ko taua āhuatanga anō — he tūāpapa kāore e taea te kite whakawhānui i ngā hapori — e whakautu ana i ngā herenga ture e pā ana ki ngā hapori reo iti o te EU i raro i te Ture Rangatiratanga Pāpāho o Europi me ngā tiaki kāwai motuhake o te Tuhinga 9 o te GDPR, ā, i reira ka taea te whakamāramahia ngā raraunga ahurea reo iti hei kāwai motuhake. Ka taea e tētahi hapori o Wēra, tētahi hapori Sámí, tētahi hapori Sorāpia, tētahi hapori Pirīhia, tētahi hapori Kātālānia te whakamahi i taua hanganga anō mā te whakaharatau anō i te paparanga reo ki runga i tētahi kohinga kōrero rerekē, me te tuhi anō i te kaupapa here i raro i tō rātou ake anga ture; kawea whānuitia te hanganga nei. He āhuatanga matua o te hanganga tēnei āheinga kawea whānuitia.

2.3 He aha i ”ngā rekoata rangatira” ai, kua ko ”kua whakamunatia i te wā e tū ana”

He kupu whai whakaaro te kīanga '*rēkōta rangatira*'. He āhuatanga te whakamunatanga i te wā e tū ana; he āhuatanga hanganga te rangatiratanga. He rangatira te rēkōta i roto i te aronga e hiahiatia ana i konei ina tika ngā mea e whai ake nei:

1. Ka mau tonu tōna ake takenga mai — ko wai i tuhi, ko wai tōna kaitiaki (kaiwhakahaere), i raro i te tikanga aha i tohatohahia ai, i te wā i hangaia ai, me tētahi hash whakamuna e here ana i ēnei wāhanga katoa.
2. Ka mau tōna ake kaupapa here — ko wai ka taea te pānui, ko wai ka taea te whakangungu, ko wai ka taea te kaweake, ā, he aha ka tupu mēnā ka taupatupatua ngā kaupapa here.

3. Ka kawea e ia tōna ake mekameka taunakitanga — ia rohe whakahaere kua whakawhitia e ia (te waihanga, te whakahou, te kawea, te muku) kua tuhia ki tētahi haina whakamunatanga.
4. Ka kitea te pūrua o tōna tūnga whakamana i te wā pānui — ka kite ia kaiwhakamahi API mēnā he hou, kua pau, kāore i te hāngai, kāore rānei e taea te whakamana i te mekameka o te rēkōta, me te kore e whakawhirinaki ki te kupu a te papa.
5. Ka taea te kawea i runga i te tono a te mema. Ka taea e tētahi mema te kawea i te kohinga katoa o ngā rekoata e ia te kaituhi, te kaitiaki rānei, kua ingoa rānei hei tangata e pā ana ki ngā raraunga; ka kawea tonu te mekameka whakamana i roto i te kawea; ā, mā tētahi kaiwhakamana o waho e mau ana i te tuhinga tuakiri kua whakaputaina e te kaipāpā taketake, ka taea te hanga anō i ia tomokanga kua hainatia e ngā rekoata.

He āhuatanga whakahaere ēnei, ka taea te whakamātautau mā te mata API, ehara i te mea he whāinga noa. Ko te toenga o tēnei pepa e whakamārama ana me pēhea te hanga o ia mea.

2.4 Kotahitanga: ā-taha e rua, ā, he here

Ko te federation i te aronga o te papa he whakaritenga hangarau whaiti e tuku ana kia hono ngā tauira kaipāmu rangatira e rua mō ngā kaupapa motuhake kua herea — ngā hui ā-tahi, ngā waka tiritahi, ngā pānui whakawhiti-tauira — me te kore e tuku i ngā raraunga, te tuakiri, te mana whakahaere rānei. He whakaaetanga ā-taha e rua te federation: ka whakaae ngā ture matua o ngā kaipāmu e rua, ka whakaae ngā kaiwhakahaere e rua, ā, ka hainatia e rāua te tuhinga whakaatu o te federation. Kāore he tūmau pokapū uniana; he tika tonu te rere raraunga, he ā-rohe te whakahaere, ā, ka taea e tētahi taha te whakakore i te uniana i ngā wā katoa.

He rerekē tēnei i tōna hanganga ki te tauira papanga, ā, i reira, he peka o te rākau a tētahi kaiwhakahaere kotahi ngā tauira. He rerekē hoki i tōna hanganga ki te tauira rangatira o te ao-whakawhanaunga, ā, i reira, he āhuatanga ā-whatunga whānui te whakawhanaunga, e whakahaerehia ana mā tētahi kawa tiritahi i waenga i ngā tūmau e whakahaerehia ana e te kaiwhakahaere. Ko te hanganga e whakamārama ana i konei he takirua, he herekore: e whakaae ana ngā hāpori e rua, i runga i ngā tikanga ka tautuhia e rātou, ki tētahi whakawhitinga kōrero motuhake, ā, koia noa iho tērā.

§3 e whakanoho ana i tēnei ki ngā tuhinga tata. §7 e pūrongo ana i te hanganga hononga kua tukuna me tōna tūnga whakaurunga ora. §10 e whakaatu ana i tētahi tauira mahi mō tētahi hononga ā-rua i waenga i tētahi wāhanga mātauranga otaota me tētahi wāhanga whakahou reo — he momo hononga e whakaae ana mō te whakaurunga ki ngā marautanga o ngā kura tuatahi.

2.5 Te mema hei tangata raraunga

He mema nō tētahi kaipāmu rēhita rangatira, ā, i te wā kotahi, he mema ia nō te hapori (me ngā mana pāpori, whakahaere, me te waihanga ihirangi e hāngai ana ki taua mema) ā, he tangata e pā ana ki ngā raraunga i raro i ngā anga whakahaere e pā ana ki a ia. He tangata raraunga GDPR tētahi mema o te hapori reo Wēra; ka taka ngā raraunga o tētahi mema o te hapori Māori i raro i ngā mana o Te Tiriti o te iwi me ngā mana GDPR o te tangata takitahi ina whakahaere te iwi i ngā hanganga e manaakitia ana e te EU mō ngā mema kei tawahi; he tangata raraunga GDPR mārāma noa tētahi mema o tētahi Verein Tiamana.

Ka whakaarohia e te hanganga he mea matua te anga o te mema hei tangata e pā ana ki ngā raraunga. Ka tautuhi te poraka `metadata.origin` o ia rekoata i te ingoa o te kaituhi me te kaitiaki (mēnā he rerekē), ā, he tohu tuakiri whakawātea-ā-rohe ēnei e rua. Ka whakapuaki te poraka `metadata.policy` o ia rekoata mēnā, ā, me pēhea hoki e taea ai te tiritiri, te whakamahi hei whakangungu, te kawewe rānei i taua rekoata, ā, ka whakatau i ngā taupatupatu kaupapa here mā te taunoa ā-ture. Ka tango te kawewe e ārahi ana te mema (§8) i te kaupapa here i tōna āhua noa: tērā pea ka aukatia e te kaupapa here o tētahi rekoata tōna kawewe, ahakoa e tōna kaituhi anō (hei tauira, he whiriwhiringa i tukuna i raro i ngā tikanga whakaaetanga ā-rōpū), ā, ka whakatinana tēnei e te anga kawewe. Ehara te rangatiratanga i te mema ki te rōpū; he anga hanganga tēnei e noho tahi ai ngā mana e rua, ā, mā tēnei anga e whakakite mārāma ai te taupatupatu, kua e huna i roto i ngā kōwhiringa whakatinana.

3. Ngā Mahi Honohono

Kei te tū te hanganga i te hononga o ngā ara rangahau me te whakawhanaketanga maha e kaha ana. He mea tino hira te tūnga, nā te mea ehara te koha i te whakauru i tētahi pūtake kotahi anake — ka whakamahia anō ngā pūtake hanga e mōhiotia ana — engari ko te whakauru i aua pūtake ki tētahi turanga e whakautu ana i te tauira whakatumatuma i §4, mai i te taumata rekoata ki runga, kua mai i te taumata kaiwhakahaere ki raro.

Ko te wetewete tuhinga e whai ake nei i §§3.1–3.7 e whakanoho ana i ngā ū ki tēnei pepa ki tō rātou horopaki rangahau tata. Ka taea e ngā kaipānui e aro ana ki ngā take whakahaere te anga whakamua ki §7 (federation in production), §8 (sovereign portability), §9 (stakeholder governance UI) me te whakaaro ka puta ko ngā pūtake o te hanganga — te federation ā-taha e rua, te kawewe rangatiratanga, ngā whakamana mō te muku whakamuna e ora tonu ana ahakoa te whakaeke a te kaiwhakahaere — kāore e taea te karo i te wā e rere ana te pūnaha, ahakoa te hiahia a te kaiwhakahaere. Ko ngā tuhinga kei raro nei e whakaatu ana i te tūnga o ia pūtake tuatahi ki tōna hoa tata rawa atu i roto i ngā rangahau kua whakaputaina.

3.1 Hanganga ā-pāpori honohono

ActivityPub [Snell & Prodromou, 2018, Tūtohutanga W3C [20]] me te taiao Mastodon e whakatū ana i te hononga hei āhuatanga whānui o te whatunga, e whakahaerehia ana e tētahi kawa tiritahi i waenga i ngā tūmau e whakahaerehia ana e ngā kaiwhakahaere. I roto i te kotahitanga o ActivityPub, ka kotahi ngā tūmau e rua mā te whakawhiti i ngā tūemi ngohe kua hainatia; ko te taipitopito he mea ia kaiwhakaaari, ia ngohe, ā, mā ngā tauranga kohikohi o te kawa e whakahaere. He rerekē tēnei ā-hanganga i te kotahitanga ā-taha-rua me ngā here kua whakamārama i konei. Ko te koha a ActivityPub ko te mahi tahi puta noa i ngā mano o ngā tauira; ko te koha o tēnei pepa ko te tiaki rangatiratanga puta noa i ngā tauira e rua anake i te wā kotahi, mā te rārangi tohu kua hainatia, ā, ko te whakakore he mahi matua. He whakautu whai mana ēnei hanganga e rua ki ngā tū rangatiratanga rerekē: ka whakapai ake a ActivityPub mō te toro o te whatunga; ko tēnei pepa e whakapai ana mō te mana ā-iwi/ā-rōpū ki runga i te anga hononga.

Ko ngā tuhinga pāpāho pāpori kore-pokapū e tuhi ana i ngā āhuatanga o te matatini-hononga, ngā whakawhitinga whakahaere taumata-tauira, me ngā āputa kawehirangi. Ko ngā whakamārama ā-mātai o te matatini Mastodon me ngā tauira whakahaere-tauira [31][32] e whakamōhio ana i te tātaritanga whakahaere o ngā tūāpapa fediverse; ko ngā mahi whai muri mai mō te AT Protocol [Bluesky Public Benefit Corporation, 2024 [21]] i tūtohu i te kawepūketete — ka whai i te mema ngā raraunga a te mema, ehara i te tūmau — hei whakautu hanganga ki te raru whakahaere me te kitea. Ko te kawerangatiratanga o tēnei pepa (§8) he hononga hangarau, engari he take kē i whakaohoho: he tika mō te tangata e pā ana ki ngā raraunga i raro i te Tuhinga 15 o te GDPR, ā, he wāhanga nui, ehara i te mea kōwhiringa, te tiroiro whakaaetanga ā-ture matua a te kaupapa e whiwhi ana (§8). Ko te kawewanga o te AT Protocol e ārahi ana e te pūketete; ko te kawewanga o tēnei pepa e ārahi ana e ngā rekoata, ā, e whai ana i ngā kaupapa here, me tētahi rārangi whakamunatanga e kapi ana i ngā rekoata e aukatia ana e tō rātou kaupapa here kia tukuna ki waho, ahakoa mā tō rātou kaituhi.

3.2 Ngā tuakiri ā-roto me ngā tohu taunakitanga ka taea te whakamana

Ko te whakaritenga W3C mō ngā Tohu Tuakiri Kore-pokapū (DIDs) v1.0 [11] e whakatū ana i tētahi anga tohu tuakiri kāore e whakawhirinaki ki te tikanga, ā, e tautoko ana i ngā momo tikanga whakataua. Ka whakaputa ngā kaupapa me ngā mema o te tūāpapa i ngā tuhinga DID ki ngā tauranga mutunga rongonui i raro i tō rātou ake rohe; ka mahia te whakamana i ngā mahi whakamunatanga (ngā hash takenga, ngā haina mekameka taunakitanga, ngā whakaaturanga hononga, ngā kohinga kaweweake) ki ēnei tuhinga. E whānuitia ana tēnei tauira; ko te whakataua hanganga he mea kia taea te whakamana motuhake i ia mahi whakamunatanga o te pūnaha mā te whakamahi anake i te tuhinga DID kua whakaputaina e te kaupapuri whenua taketake me ngā pūtake whakamunatanga

paerewa — kāore he kaiwhakamana tuatoru, kāore he pakiaka whakawhirinaki tiritahi, kāore he rārangi ingoa pokapū.

3.3 Solid me ngā putunga raraunga whaiaro

Ka whakanoho a Solid [Mansour et al., 2016 [22]; W3C Solid Community Group] me te papanga Inrupt i ngā raraunga ki roto i ngā pōro whaiaro e rangatira ana te tangata whai raraunga, ā, ka tono ngā taipānga mō te uru mā te whakaaetanga e hāngai ana ki te WebID. Ko te ū ki te hanganga o Solid, ko *te raraunga mō ia tangata*; ko *te ū* o tēnei pepa, ko *te raraunga mō ia hapori*, ā, ko *ngā mema hei tangata matua o ngā raraunga i roto i te hapori*. He mea whakakikī ēnei e rua, ehara i te mea whakataetae: i te ariā, ka taea e tētahi pod Solid te mahi hei ūnga kaweweake mō tētahi kohinga rekoata rangatira, ā, i te ariā, ka taea e tētahi hapori e tiakina ana e ōna mema ngā pod Solid te whakatinana i te kaipāpā rekoata rangatira o te tūāpapa i runga ake. Ko te kōwhiringa a te tūāpapa kia arotahi ki te wāhangahapori e whakaata ana i tētahi tūnga hira, arā, ehara ngā hapori reo iti me ngā hapori taketake i te kohinga noa o ngā tangata takitahi e mau ana i ngā raraunga: ko te rōpū anō te kaitiaki o ngā mana mō ngā taonga (mātāpono CARE: Painga ā-Rōpū), ā, me tautoko e te hanganga te mana whakahaere a te rōpū (Mana Whakahaere).

3.4 Te ako honohono me ngā whakawhirinaki raraunga

He rerekē te hanganga o te ako honohono [McMahan et al., 2017 [23]; Kairouz et al., 2021 survey [24]] i tēnei mahi. Ka whakangungu te ako honohono i tētahi tauira tiritahi mā te whakawhitiwhiti i ngā whakahōutanga pikinga puta noa i ngā rōpū e pupuri ana i ngā raraunga, me te kore e whakawhitiwhiti i ngā raraunga mata. Kāore rawa te hononga o tēnei pepa e whakawhitiwhiti ana i ngā tawhā tauira — he whakaaetanga raraunga i waenga i ngā kaipupuri rōpū i raro i tētahi whakaaturanga kua hainatia, ā, ka tautuhia te rerenga raraunga mō ia whakaaetanga, ā, kāore he tauira tiritahi e tohu ana. Ko te paparanga reo ā-horopaki o te tūāpapa he mea hanga kia motuhake mō ia kaipupuri rōpū; Ka takahi te tiritiri tawhā-tauira i waenga-kaiwhakamahi i te pūtake taketake o te wehewehe-kaiwhakamahi (§5.1). Ka whakaaturia motuhake ngā taunakitanga whakamātautau-mātauranga mō te paparanga reo-ā-horopaki i roto i te Puka B (he whakarāpopototanga o te puka hoa whakamātautau-mātauranga kua whakaputaina).

Ngā whakawhirinaki raraunga — i whakawhanakehia i roto i te whakamārama mahi a te Open Data Institute mō te whakawhirinaki raraunga hei “tētahi hanganga ture e whakarato ana i te tiakitanga motuhake o ngā raraunga” [33] me ngā rangahau ōrite a Element AI mō te hoahoa whakahaere whakawhirinaki raraunga hei tikanga mō te whakatika i ngā hē taurite mana i waenga i ngā kamupene hangarau, te kāwanatanga, me te iwi whānui [34] — ka whakauru i tētahi kaitiaki tuatoru e pupuri ana i ngā raraunga mō te hapori, ā, e whakarite ana i te uru. Kāore he kaitiaki pēnei i roto i te hanganga o tēnei pepa. Ka taea e te kaiwhakahaere papanga te whakahaere i ngā mahi hanganga (te waihanga

kaipā, te whakahaere nama, te aroturuki i te hauora), engari kāore e taea e ia te pānui i ngā ihirangi a ngā kaipā. Kāore he tūranga i roto i te pūnaha e whakakotahi ana i ngā raraunga whakawhānui-teneti, ahakoa mō te wā poto. Kō te kaha o te whakawhirinaki raraunga ko te pokapū whakawhiti ā-tari; ko te kaha o tēnei hanganga ko te kore e taea te pokapū whakawhiti mai i roto i te papanga.

3.5 Te whakatinanatanga o te Tuhinga 15/20 o te GDPR

Ko te tika ki te uru (Tūtohu 15) me te tika ki te kawē raraunga (Tūtohu 20) o te Ture Whānui mō te Tiaki Raraunga [8] he nui ngā tuhinga whakatinana — tae atu ki a Wachter, Mittelstadt me Floridi [26] mō te wero mō ngā mana whakamārama, me Edwards & Veale [27] e kī ana he taumaha ake ngā mana whakakore (Tūtohu 17) me te kawē raraunga (Tūtohu 20) i ngā mana whakamārama mō te haepapa ā-algoritim. Ka whakatinana e te tauranga DSR o te papanga (§8) ngā mana e ono e hāngai ana (Ngā Tuhinga 15, 16, 17, 18, 20, 21) mā te ara kawēake rangitaki rangatira kotahi, ā, ka whakahoki i ngā rangitaki o te tangata e pā ana ki ngā raraunga me te tiaki katoa i te mekameka taunakitanga, i roto i te JSON, CSV, rānei ngā hōputu PDF, hei kohinga kotahi mana. Ko te āhuatanga hangarau hou i konei ko *te āhei whakamana muna* o te kohinga: ka taea e tētahi rōpū o waho, me te tuhinga DID kua whakaputaina e te kaipāpā taketake, te whakamana i ia tomokanga kei roto i ngā rekoata o te kohinga, me te kore e whakawhirinaki ki te kaipāpā taketake, ki te rōpū whiwhi i tīpakohia e te tangata e pā ana ki ngā raraunga rānei. Ka whakahoki ngā whakatinanatanga paerewa o te Tuhinga 15 i ngā raraunga; ko tēnei whakatinanatanga ka whakahoki i ngā raraungaka taea te *whakamana*.

3.6 Ngā Mātāpono CARE me te whakahaere raraunga taketake

Ko ngā Mātāpono CARE [4] e whakarite ana i tētahi herenga nui e pā ana ki ngā hanganga: *Ko te mana whakahaere* e hiahia ana kia taea e te hapori — ehara i te kaiwhakahaere papanga, ehara i te kaitiaki tuatoru, ehara i te kaiwhakahaere ture me te mana whakahau i waho i te mana whakahaere o te hapori — te whakahaere i ngā raraunga i runga i āna ake tikanga. Ngā mahi whai muri i roto i te whakahaere raraunga taketake — Walter & Suina [25] mō ngā raraunga taketake me ngā tikanga mahi; *Ngā Mātāpono* o Te Mana Raraunga mō ngā Raraunga Māori Te Rangatiratanga [28]; Carroll, Rodriguez-Lonebear & Martinez [29] mō ngā rautaki a ngā iwi taketake o Amerika; Hudson, Anderson, Dewes, Temara, Whaanga & Roa [30] mō te ariā o te raraunga nui mā te tirohanga Māori — kua whakamārama i ngā pānga puta noa i ngā huringa ora raraunga (te kohikohi, te rokiroki, te tukatuka, te tiritiri, te whakapaipai). Ko te kōwhiringa hanganga o te tūāpapa — ko te wehewehe kiritaki hei tūāpapa, ko ngā rekoata rangatiratanga hei turanga, ko te kotahitanga ā-taha e rua anake hei tikanga whakawhiti kiritaki — he otinga hangarau kotahi ki ngā herenga CARE; ehara i te mea koia anake te otinga e taea ana, engari he otinga hanganga e ora

ana i te arotake o te Tuhinga 2 o Te Tiriti i te take motuhake o ngā raraunga iwi o Aotearoa me te pēhanga ā-rohe o te karaehe EBSB.

Ko te kohinga mahi a Dr Taiuru mō te whakahaere AI Māori [25a, 25b] (i whakaurua i §2.2) e whakakoi ana i ngā herenga CARE hei oati hanganga motuhake. Ko te haepapa whakaritenga — te whakaaetanga a te iwi Māori me te rangatiratanga raraunga ki runga i ngā mōhiotanga e whakamahia ana i te whakangungu AI, te haepapa puta noa i te mekameka whanaketanga i waenga i ngā kaihanganga me ngā kaiwhakahaere, me ngā herenga o Te Tiriti ki ngā pūnaha AI e whakamahi ana, e whakaputa rānei i ngā raraunga a te iwi Māori — e pā ana ināianei ki tētahi papaanga katoa e pa ana ngā mata AI ki ngā rauemi taonga. Ko ngā pūtaka hanganga e pūrongo ana tēnei pepa (te wehewehe kiritaki hei Rangatiratanga Artikulu-II mō ngā raraunga; te whakangungu rōpū mō ia kiritaki hei wāhi mō te whanonga tauira i whakatauhia e te haporī mō ngā kiritaki e mau ana i te tuakiri Māori; te mata kōrero ārahi Wāhanga-6 kua tukuna (Wāhanga 9) hei tiro tiro kaitiaki mō ngā mea e tukuna ana e te mata; te mutunga o te muku whakamunatanga hei Rangatiratanga mō ngā mea ka warewaretia; Ko te tautuhi i runga i te DID me te mekameka whakamana hei āheinga whaiwhakapapa mō ia rekoata) hei urupare hanganga ki taua haepapa whakahau. Ko te pātai anō e whakatakotoria ana e Dr Taiuru [25a] — mēnā, ā i raro i ngā āhuatanga hea rānei, ka taea te whakawhānui i te tangata ā-ture ki ngā māngai AI i hangaia e te mātauranga Māori, i runga i te tauira o Te Urewera (2014), Te Awa Tupua (2017), me Te Kāhui Tupua (2025) — e whakauru ana ki te Puka B hoa i te taumata o te whakangungu ā-rōpū, kāore i mua-whakawhitia i roto i tēnei puka.

3.7 Ngā mōrearea tata: te kerī kapua ā-tawahi mā te AI matatau

Kua tātaritia e ngā kōrero ahumahi mō te hanganga AI rangatira [22b][23b][24b] te whakakotahitanga o ngā anga uru ā-ture o Amerika (CLOUD Act; FISA) me te whakaurunga o ngā tauira AI ā-mua i runga i ngā hanganga kapua e whakahaerehia ana e Amerika hei ara tūraru kotahi: ka taea te tiki i ngā raraunga i raro i te here ā-ture o tāwāhi, ā, ka taea te tātari whānuitia e ngā tauira AI ā-mua mō ngā tauira e whakawhānui ana i te rohe whakapuakitanga taketake. He tino kaha ngā pānga mō ngā raraunga ā-tinana, tuakiri, me te whakamana. Ko te whakautu hanganga e tūtohu ana tēnei pepa, ko te kore rawa e noho ngā tohu whakamana matua me ngā raraunga ā-tinana ki roto i ngā hanganga kapua e taea te toro atu e ngā whenua kē i te tuatahi, ā, kia puta katoa ngā whakawhitanga a te LLM ki ngā raraunga rangatira mā tētahi atanga e whakahaerehia ana e te kaipāpā, ā, i reira ka herea e te kaipāpā ngā mea ka taea e tētahi tauira o waho te ako, te pupuri rānei.

4. Tauira Whakatumatuma

Ka whakamana tēnei wāhanga i ngā mōrearea kua hoahoatia te hanganga kia aukati. Ka whakahuatia e te tauira ngā hoariri e ono, ka kī i ngā tūāhua rangatiratanga kāore e taea e ia te takahi, ā, ka whakatau i ia tūāhua ki tētahi kīanga ka taea te whakamātautau.

4.1 Ngā Hoariri

A1. Kaiwhakahaere tūmau kua whakahaua e te mana whakahaere ture. He kaiwhakahaere papanga e whakahaua ana e tētahi pūnaha ture o tāwāhi — he ota CLOUD Act, he tiwhikete FISA, he whakaritenga uru pātengi raraunga o te Enhanced Border Security Partnership, he whakaritenga ōrite i raro i tētahi atu mana whakahaere ture — kia whakapuaki i ngā raraunga o ngā kiritaki e taea ana e ia te uru mā te hangarau. Ka taea te whai tahi i te whakahau mārearea. Ka taea e te kaiwhakahaere te mahi i runga i te ngākau pono, i te ngākau kino rānei, i raro rānei i te pēhanga; kāore te hanganga e aro ki te take a te kaiwhakahaere, ā, ka whakaarohia te āhuatanga kino rawa atu. Ehara te rōpū hoariri i te mea whakapae noa: tirohia, hei tauira, te tukunga raraunga o Mei 2026 a Instructure / Canvas, i reira i tangohia atu ai e ngā kaiwhakawhitihiti raraunga mai i tētahi kaiwhakahaere hangarau mātauranga kotahi ngā rekoata tata ki te 275 miriona puta noa i ngā whare wānanga 8,809 (he maha ngā pūrongo, tae atu ki a Malwarebytes, TechCrunch, me SecurityWeek; i whakapae te rōpū ShinyHunters i te takahi; i whakau a Instructure i te uru kore mana).

A2. Hoa noho tahi. He kaiwhakamahi anō kei runga i taua hanganga turanga kotahi e ngana ana ki te pānui i hirangi kāore e mana ana ki a ia, ahakoa mā te hanga pātai, mā te mōhiotanga hoahoa raraunga, mā te pikinga tūranga, mā te whakamahi rānei i tētahi rauemi tiritahi (papa raraunga, pūrua, pūnaha kōnae).

A3. Hoa hononga ā-roto i waenga i ngā kaipā. Ko te kaipā kei tētahi taha kē o tētahi kirimana hononga ā-roto-a-rua, e ngana ana ki te uru ki ngā raraunga i waho o te kaupapa here herea o te whakapuakitanga, rānei kua pakaru tōna ake hanganga ā-ture (whakaeke mekameka whakawhirinaki mā te hononga ā-roto).

A4. He mema hei kaiwhakaeke. He mema nō tētahi kaiwhakahaere e ngana ana ki te uru ki ngā i hirangi kāore ia i whakaaetia kia pānui (hei tauira, ngā whakawhitihiti whaiaro a tētahi atu mema, he rēkōata herea ki tētahi rōpū iti kāore ia i roto), rānei e ngana ana ki te whakapuaki mana kāore ia e mau ana (hei tauira, te whakahaere i tētahi mahi whakahaere kaiwhakahaere, te whakarerekē i te ture matua).

A5. Hoariri-tīaho-ā-waho-mā-AI-pāpā. He hoariri i whakahau kia uru ki ngā raraunga mā A1, kātahi ka whakateri i aua raraunga mā tētahi tauira AI pāpā kia tangohia ngā tauira e nui ake ana i te rohe ture o te whakapuakitanga taketake — te hononga ā-tinana puta noa i ngā taupori, te whakapae tauira

whakamana mai i ngā metadata wāhanga, te hanganga anō i te mahere pāpori mai i ngā tohu whakawhitinga.

A6. Hoariri e whakamahi ana i ngā raraunga ā-tinana. He hoariri, mā te whakakotahitanga o A1 (kaiwhakarato i whakahaua e te mana whakahaere ture) me A5 (te kōhi raraunga kapua ā-waho mā te AI matatau), e ngana ana ki te whakamahi i ngā raraunga ā-tinana i puritia e te tūāpapa — ngā kanohi, ngā tapumata, ngā tapu reo, ngā karapa karu, ngā kōtaha ā-tinana whanonga — hei tautuhi, hei hono, hei whakamanamana rānei i ngā mema. Ka piki te kaha o te hoariri i te mea kāore e taea te whakahoki i ngā raraunga ā-tinana: ka taea te whakarereke i tētahi kupuhipa kua pakaru, engari kāore e taea tērā mō tētahi tapumata kanohi kua pakaru. Ka whānui ake te taumata whakahaere a te hoariri nā ngā huarahi toru e whakakotahi ana mō te pānga ki ngā mana whakahaere o Amerika mō ngā raraunga ā-ira tangata — te hopu tika i te taha o Amerika i ngā rohe me ngā uiuitanga vīsa, te manaaki kapua o Amerika i raro i te pēhanga o te CLOUD Act, me ngā whakaritenga ā muri ake o te Enhanced Border Security Partnership e whakaaro ana ki te uru tika ki ngā pātengi raraunga ki ngā putunga raraunga ā-ira tangata o ngā whenua hoa. Ko te whakautu hanganga, kāore te tūāpapa e rokiroki i ngā raraunga ā-tinana o ngā momo katoa i roto i ngā huarahi e whakahaere ana ia (tirohia ngā mātāpono hoahoa o §5 me te āhua whakahaere kaiwhakarato o §13.1).

A7. Hē-whakapae-nā-te-kaiwhakakotahi. He mata-ā-mahi ā muri ake nei — he wā-whakahaere, he mau tonu, he aronga-ki-te-whāinga — e kohikohi ana i ngā ihirangi puta noa i ngā kaipāpānga, puta noa rānei i ngā rekoata kei roto i tētahi kaipāpānga, i ngā huarahi e karo ana i ngā kaupapa **here share_within** mō ia rekoata, i te tautuhi kaitiaki mō ia rekoata rānei; rānei ka whakaputa i ngā tautuhinga e ara ake ana (kaituhi, kaitiakitanga, hononga e mau ana i ngā tikanga) kāore e tautokohia ana e ngā rekoata kei raro iho nei. Ko te wā-whakahaere o te tūāpapa i ēnei rā e kapi ana i te tuku-huringa-kotahi o te paparanga-ā-reo-ā-horopaki (§5 ngā mātāpono hoahoa) me te mata kōrero-ā-wini-a-wini Wāhanga-6 kua tukuna (§9), ā, he ārahitia hoki tēnei — he rārangi whakatika kua whakaaetia e te kaiwhakahaere, he kuaha tuhi-tukuna, kāore he tuku aunoa, kāore he karere ki waho. Kāore rānei e whakaatu i te pūnaha hangarau katoa o A7 (motuhake + manawaroa + whakakotahitanga-ā-pūrongo). Ko te haepapa whakahaere o Te Tiriti i whakapuaki a Dr Taiuru (2026) (tirohia §3.6) e pā ana ki te kawenga matatini o tēnei hoariri — arā, ko ngā tukunga whakawhiti-pūrongo, whakawhiti-kaiwhakamahi rānei mai i tētahi kaiwhakamahi e mau ana i te tuakiri Māori, ka kawē i taua haepapa ahakoa te taumata motuhake o te mata. Ko te āhuatanga tūturu o te hanganga I3 (te whakapuakitanga e whai ana i ngā kaupapa here) te ārai hangarau matua: ia tukunga whakawhiti-pūrongo, whakawhiti-kaiwhakamahi rānei ka āraitia e te kaupapa here i te rohe huarahi; ko te tautuhi kaitiaki me te mekameka taunakitanga e kawē ana i te āheinga whai whakapapa puta noa i ia pūrongo; ko te kuaha rārangi whakatika Wāhanga-6 + tuhi-whakamātau-whakaputa (i hangaia i runga i te tauira o te whakahau a Mastodon kia whakaputahia anake i runga i ngā tohutohu) he tikanga tēnei hei aukati i te puta huna o ngā whanonga

whai tikanga kaha ake mai i te pae turanga ārahitia. Ko te whai i ngā tohutohu whānui a Dr Taiuru — arā, he māmā ake te whakauru i te whakatutuki tikanga i te tīmatanga, i te whakatikatika i muri mai — Kua ingoaia A7 i konei kia whiwhi ai tētahi nekehanga ā muri ake ki te rangatiratanga motuhake, ki te toitūtanga rānei i te āhuatanga whakahē hei tūāhua kore-huringa i te wā hoahoa, kaua hei whakatikatika ā muri.

4.2 Ngā tūāhua tūmatanui

Mō ia hoariri, ka tiakina e te hanganga tētahi, neke atu rānei o ngā āhuatanga tūturu:

I1. Motuhake o ngā ihirangi a te kaipā. Kāore he tūranga kaiwhakahaere tūāpapa, kāore he kaipā tahi, kāore he tukanga aunoa i waho o te horopaki tono a te kaipā e taea te pānui i ngā ihirangi a te kaipā. (E tiaki ana i te A1, A2.)

I2. Tūturutanga o te takenga mai. Ko te kaituhi me te kaitiaki o ia rēkoata ihirangi kua herea mā te kōtuhi huna ki te ihirangi o te rēkoata; kāore e taea te whakarerekē i tētahi wāhanga kia huna, kia kore ai e whakakore i te pātaka whakamana. (Hei ārai i A1, A4.)

I3. Whakaputanga e whai ana i ngā kaupapa here. Ka whakaute e ngā rerenga raraunga katoa e whakawhiti ana i ngā kaipāpā, i ngā rohe rānei, ngā āhuatanga `metadata.policy.share_within` o te rēkōta me te kaupapa here herea o te federation manifest; ka whakakahorehia ngā rerenga i waho o taua anga i te rohe huarahi. (Hei ārai i ngā whakaeke A1, A3.)

I4. Te mutunga o te muku whakamuna. Ka taea te muku i ngā rekoata kua tautuhiate `metadata.policy.delete_must_be_cryptographic` i runga i tētahi tikanga e kore ai e taea te whakahoki mai i te kuputuhi whakamuna i te āhua kua rokiroki, ahakoa mā te kaiwhakahaere papanga me tōna uru katoa ki te pātengi raraunga. (Hei ārai i A1, A5.)

I5. Te pono o te whakaaturanga hononga. Kāore e whakahohe tētahi hononga ā-taha e rua kia whakamana ngā haina a ngā rōpū e rua ki ā rātou ake tuinga DID kua whakaputaina; he kaupapa kua hainatia te whakakore; kāore he hunga tuatoru e taea te whakauru huarahi huna ki te hononga. (Hei ārai i te A3.)

I6. Te āhei ki te hanga anō i te arotake. Ia kaupapa whakawhiti rohe (te waihangā, te whakahou, te kaweake, te muku, te whakahohe hononga, te whakakore hononga, te panoni mema) ka waiho he urunga mekameka taunakitanga kua hainatia; ka taea e te kaiwhakamahi te hanga anō i ia kaupapa mai i tōna ake pātengi raraunga, me te kore e whakawhirinaki ki ngā kōrero a te kaiwhakahaere papanga. (Hei ārai i A1, A3.)

I7. Pono Kawe Rangatiratanga. Ka tātarihia te kaweake mana uru a te mema e taua kuaha kaupapa here e whakahaere ana i ngā pānui noa; ka rārangihia ngā rekoata e aukatia ana te kaweake e te kaupapa here ki te rārangi

kaweake hei mea "tūhonoa", ā, ka whakahuatia te take kaupapa here. (Hei ārai i te A4, ā, hei tiaki i te āheinga o te A1 ki te kī, "i kaweake e mātou ki te tangata raraunga ngā mea katoa i tika kia whiwhi ai rātou.")

I8. Here mō te kōhi raraunga i waho o te papa. Kāore he rekoata ihirangi e puta i te pātengi raraunga o te kaipāmu i roto i te āhua tuhi mārama, engari mā tētahi huarahi kua arotakehia ki te ture matua o te kaipāmu; ka whakahaerehia te whakatau AI i te wā-whakahaere (papanga reo ā-horopaki) i runga i te hanganga e whakahaerehia ana e te kaipāmu, me ngā raraunga urunga kua herea e ngā kaupapa here. (Hei ārai i te A5.)

I9. Kāore he kohinga raraunga ā-tinana. Kāore te tūāpapa e kōhi, e rokiroki, e tukatuka i ngā raraunga ā-tinana o ngā momo katoa i roto i ngā huarahi e whakahaere ana ia — kāore he tapumata kanohi, kāore he tapumata matimati, kāore he tapumata reo, kāore he tauira karu, kāore he kōtaha ā-tinana whanonga, kāore he kī i ahu mai i ngā raraunga ā-tinana. (Ka tiaki i a A6; ka whakakaha i a A1 — kāore e taea te akiaki i te kaiwhakahaere kia whakapuaki i ngā mea kāore i kohia; ka whakakaha i a A5 — kāore he mata kerī raraunga ā-tinana e noho ana.)

4.3 Ngā tūtohunga ka taea te whakamātautau

Ka whakatau ia tūāhua ki tētahi, ki ētahi rānei o ngā whakapae ka taea te whakamātautau mai i te mata API, mā te tiro tiro tika rānei i te pātengi raraunga.

Mō I1 (te wehewehe ihirangi o ia kaipā): ia uiuitanga o ia kohinga e herea ana ki te kaipā ka hangaia kia puta he hapa whakahaere wā mēnā ka whakakore i te tātari kaipā; ka whakau tēnei e tētahi huinga whakamātautau aunoa. Ka whakatinana te mono horopaki tonono o te tūāpapa, e hāngai ana ki te `AsyncLocalStorage`, i tēnei whakaritenga; me whiriwhiri motuhake kia kaua e whai wāhi ngā uiuitanga i waho o te horopaki tonono (ngā mahi whakaritea, ngā mahi puranga), ā, me tuhi he take mō tēnei.

Mo I2 (tūturutanga o te takenga mai): mō tētahi rēkōrdar, `recompute_provenance_hash(r.metadata.origin) == r.metadata.origin.provenance_hash;` ko te whakarōpūtanga āhua paerewa he pumau i te aratau whakakī (hydration-mode-stable) (he 2026-04-22 tūraru, i reira i paahi maeneene ai ngā whakamātautau wāhanga e 25, engari i wehe ngā hash tuhinga-Mongoose tūturu i te wā-tiaki, ā, i puta mai tēnei whakaritenga). E whakau ana te whakamana take-whakamahinga (§12) i te pumau o te hash puta noa i ngā aratau whakakīwai.

Mō I3 (te whakapuakitanga e whai ana i ngā kaupapa here): mō ngā tukunga whakawhiti-ara, whakawhiti-WebSocket rānei, ka karangahia te kuaha kaupapa here wh ai hua; ka hē te rēkōrā, ā, ka mutu ki te hē (CLOSED) me te `takeshare_within_unknown_scope`; koinei te kaupapa o te kaupapa *kia pono ki ngā mea kāore e taea te whakamana; kaua e hanga itētahi āhua whakaaetanga.*

Ka tautoko tētahi whakamātautau aunoa i ngā āhuatanga hoa honohono, ā, ka whakapūmau i te whanonga o te kuaha mō ia āhuatanga.

Mō I4 (te mutunga o te muku whakamunatanga): mō tētahi rēkōrda kua tohuia he `delete_must_be_cryptographic`, ka whakangaro te muku i te kī whakamunatanga mō ia rēkōrda kei te whare putunga kī o te kaiwhakahaere; ka whakahoki mai ngā whakamātau pānui ā muri ake nei i te `"unverifiable"` (kāore e taea te whakamana) kua kote `"valid"` (whai mana); kāore e taea te whakahoki mai i te kuputuhi whakamunatanga kei te rokiroki mā te whakarereke kī.

Mō I5 (te pono o te whakaaturanga hononga): ka kawē te whakaaturanga hononga i ngā haina a ngā rōpū e rua; `verify_signature(manifest, party_a.did_document) == true && verify_signature(manifest, party_b.did_document) == true`; kāore te hononga e whakahohe mēnā ka hē tētahi; ka whakau tētahi whakamātautau tū tonu kāore he ara wāhere e whakahohe i te hononga mehemea kāore ēnei tiroiro.

Mō I6 (te āhei ki te hanga anō i te arotake): mō tētahi raupapa kaupapa here e herea ana ki te kaipāpā, ka taea te hanga anō i te mekameka whakamana i ia rēkōta kua pā mā te pānui i ngā tāurunga kua hainatia; kāore he kaupapa e noho huna ana; ka karangahia te kaituhi rangitaki arotake o te hanganga mai i tētahi wāhi aukati kotahi kāore e taea te karo mā te kaiwhakahaere e peke ana i te karanga.

Mō I7 (pono kawē rangatiratanga): mō tētahi tono kawēake Tuhinga-15, kei roto i te whakautu (a) te kohinga paerewa, (b) te rārangi whakakorea e ingoa ana i ia rekoata kua whakakorehia me tōna take kaupapa here, (c) he rīpeka hainatia e kapi ana i ēnei e rua. E whakau ana tētahi whakamātautau whakaurunga kua whakakorehia ngā rekoata whakakorea , ā, kua rārangihia.

Mō I8 (here mō te kōhi raraunga i waho o te papa): kei te manaaki te paparanga whakatau i te wā whakahaere i runga i ngā hanganga e whakahaerehia ana e te kaipāpānga, e whakawhirinaki ana te hapori rānei (i te take o te papa, ko te EU-rangatira OVH France, arā rānei NZ-sovereign Catalyst Cloud, rānei he huringa-whakamuri eGPU kāinga kua tohua). Kāore he tono ki tētahi tauranga whakatau ā-US i roto i te ara tono whakaputa. He ture aukati kaiwhakarato, e whakatinanahia ana mā te arotake wāhere, e rārangi ana i ngā kaiwhakarato e whakaaetia ana me ngā kaiwhakarato e aukatia ana, ā, e whakamārama ana.

Mō te I9 (kāore he kohinga raraunga ā-tinana): mā te rapu wāhere (code-grep) i te rākau puna o te papa, kāore he hua e puta mō ngā ingoa o ngā whare pukapuka, o ngā API rānei e whakahaere ana i ngā raraunga ā-tinana; mā te tiroiro i te wā whakahaere i ngā putunga raraunga o te papa, kāore he mara e āhua raraunga ā-tinana; e whakapuaki ana tētahi whakamātautau tūmau kāore he whare pukapuka whakahaere raraunga ā-tinana i kawemai ki hea rānei i roto i te puna o te papa. Kua whakaurua te ū ki te hanganga i roto i te ture aukati kaiwhakarato (§13.1) ā, ka whakamana mā te arotake wāhere i

ia panoni. Ka whakaaetia te wetewete ā-tinana mā te pūrere ā-rohe o te mema i tētahi pātaka tohu whakamanatanga e whakahaere ana te mema — pērā i te Apple Secure Enclave, te Android StrongBox, ngā pātaka tohu taputapu-mārō — ā, kāore e kitea ana e te papaanga i te hanganga; kāore rawa te raraunga ā-tinana e whakawhiti i te rohe o te papaanga.

Ehara i te mea kua oti katoa te tauira whakatumatuma. Koinei te tauira e *mōhiotia ana* te hanganga hei tiaki, ā, he kīanga whakamātautau ā-ingoa ka taea e te kaiwhakahaere me ngā kaitātari o waho te whakamātautau. Ko ngā whakatumatuma kāore i whakarārangitia i runga ake nei (pērā i ngā whakaeke whakamunatanga taupatupatu, ngā whakaeke huarahi-taha ki te whare putunga matua, ngā whakaeke mekameka tuku ki te anga Tractatus) kei waho i te kaupapa o tēnei pepa, engari kei te aroturuki i roto i ngā tikanga whakahaere o te kaupapa.

5. Ngā mātāpono hoahoa

5.1 Te wehewehe kiritaki hei pūtake, ehara i te āhuatanga

Ko te kawenga tuatahi o te hanganga, ko te wehewehe kiritaki hei pūtake matua. Ka tātarīhia ia uiui pātengi raraunga ete `tenantId`. Ka whakatinanahia te tātari e tētahi mono tāpiri pātengi raraunga e rere ana ki tētahi horopaki tono `AsyncLocalStorage`; me whiriwhiri motuhake ngā uiui i waho o te horopaki tono (ngā mahi kua whakaritea, ngā mahi puranga) kia kore ai e whai wāhi, ā, me tuhi he take mō tēnei. Kāore he tūranga kaiwhakahaere papanga hei uru ki ngā ihirangi ā-tāwāhi; ka taea e te kaiwhakamahi kaiwhakahaere papanga te waihanga me te whakahaere i ngā tāwāhi (ngā whakahaere hanganga), engari kāore e taea e ia te pānui i ngā ihirangi o ngā tāwāhi. Ehara tēnei i te kōwhiringa whiriwhiringa — ka whakatinanahia i roto i te waehe, ā, ka whakaarohia he hapa haumarutanga ngā whakamātau katoa ki te uru ā-tāwāhi.

He pakari te tikanga. He rekoata mahara kotahi kei roto, kua tohu "kua rawa e whakakore", e whakaputa ana i te mātāpono: "*Ko te wehewehe kaipupuri te hua. Ki te kore, kāore he rangatiratanga.*" He ture hangarau ā-roto tēnei, e whakatinanahia ana mā te arotake waehe me ngā whakamātautau aunoa e hē ana mēnā ka hangaia he pātai kāore he tātari kaipupuri.

5.2 Ngā metadata o ngā rekoata rangatiratanga hei anga raraunga ōrite

Ka mau i ia tauira ihirangi e whai wāhi ana ki te pūrākau rangatiratanga te poraka metadata kotahi tonu, ka whakamahia mā tētahi mono-taipiri pātengi raraunga:

```
metadata: {  
  origin: {
```

```

    author_id, kaitiaki_id, collective_id,
    tikanga_under_which_shared, created_at,
    provenance_hash, provenance_algorithm
  },
  policy: {
    share_within, share_exclude_jurisdictions, share_include_jurisdictions,
    collective_consent_required, collective_consent_body,
    train_flag, conflict_resolution_directive,
    delete_must_be_cryptographic, delete_propagates,
    expiry, individual_overrides_respected
  },
  whakamunatanga: { tuakiri_kī, algooritama },
  proof_chain: [{ boundary_crossed, policy_evaluated_by, decision,
    caveats_added, timestamp, algorithm,
    signature, signer_id }],
  verification_cache: { verified_at, chain_hash_at_verify,
    algorithms_verified, re_verify_after }
}

```

He ōrite tonu te anga i ngā tauira ihirangi katoa i hangaia e te kaupāpā — Story, Poll, Event, Media, Album, Comment, ChatMessage, Deliberation, Correspondence, NewsPost, Resource, CommunityResource, ResourceBooking — me i ngā mata whakauru kua whakawhānuihia (te kapi o ngā tuhinga-iti o EventMenu, Edition, me ērā atu). Ka whiwhi te ara hanga o ia tauira i te takenga mai mā tētahi kaiāwhina tiritahi; ka tataua e te pūreirei penapena-mua o te mono te hash takenga mai, ā, ka hainatia te tomokanga hanga; ka penapena e te pūreirei penapena-muri te tūnga whakamana ki te putunga; ka whakapaipai ngā pūrongo katoa ki tētahi āheinga whakamana e whakaatu ana i te hou o te putunga ki ngā kaiwhakamahi. Ko te ōritetanga te take: kāore he whakatinanatanga rangatiratanga motuhake mō ia tauira, nō reira kāore he tūraru hokinga whakamuri rangatiratanga mō ia tauira.

5.3 Te takenga whakamunatanga me te ngawari o te rautaki

Ka tātaitia te takenga mai hei SHA-256 i runga i tētahi whakarārangi JSON paerewa o ngā wāhanga e hiahiatia ana, e kōwhiria ana hoki e te takenga. Kua ingoaia te tātai i roto i `provenance_algorithm`, nō reira, kāore e hiahiatia he panoni anga mō tētahi whakawhitinga ā muri ake ki tētahi pūtake whakamunatanga rerekē (hei tauira, ngā kaitono NIST mō muri-quantum) — he tomokanga hou anake i roto i taua āhua paerewa kotahi. Ka kawē hoki e ngā mahi haina i ngā tomokanga o te mekameka whakamana tō rātou ake mara `algorithm`; ka tautoko te kapi-whakawhitinga-kirihipa o te papa i te Ed25519 i ēnei rā, ā, kua hangaia kia taea te whakaae ki ētahi atu algorithm me te kore whakarerekē i ngā pae karanga.

He mea whakarite tēnei. Ka roa ake te oranga o ngā rēkōta i ngā pūtake whakamunatanga e haina ana i a rātou. Kāore e taea e tētahi hanganga e

whakauru ana i āna pūtake hei wāhere pakari te whakaae ki tētahi kerēme rangatiratanga e roa ake ana i te oranga o te pūtake.

5.4 Te tuku iho kaupapa here me te tātaitanga kaupapa here whai hua i te rohe pānuī

Ehara te kaupapa here i te mara kotahi; he raupapa tūmataiti. He ture rangatiratanga motuhake tō ia kaipāmu e whakapuaki ana i āna taunoa; ka taea e ia rōpū-iti te whakakapi; ā, ka taea e te poraka `metadata.policy` o ia rēkoata te whakamārama atu anō. I te wā pānuī, ka tātaitia tētahi kaupapa here whai hua mō te mema e tonono ana i runga i te pūrua kaupapa here o te rēkoata. Te Kaupapa Here Ka whakahaerehia e te Inheritance Engine tēnei tātaitanga; ka whakatinanahia te kuaha i te rohe huarahi mā ngā karanga ia rārangi, ia taipitopito.

Ka whakamātauria te pūnaha i ngā taumata maha: ngā whakamātautau wāhanga ia ture, te whakamana i ngā āhuatanga whakamahinga ki ngā pātengi raraunga ā-rohe e ora ana, me tētahi tikanga e whakamātautau ana ka mahi te hononga i ngā tauria whakamātautau, engari ko ngā āhuatanga whakamahinga e whakaatu ana ka mahi i te ao tūturu. Kua tuhia tēnei whakau whakamutunga — i whakaurua ki roto i ngā tikanga i muri i tētahi aitua i pā i te wā i angitu ai tētahi huīnga whakamātautau wāhanga nui mō tētahi āhuatanga i kore hononga i te whakaputanga — ki roto i ngā tikanga whakahaere o te kaupapa.

E toru ngā kōwhiringa tātari hei whakaiti i te kuaha ki ngā tauria uru motuhake: ko te origin-only e here ana i ngā pānuī ki ngā tuakiri kaituhi o te rekoata; ko te group-scope e here ana i ngā pānuī ki ngā mema o te rōpū-iticollective_id o te rekoata; ka rahua te aratau tino pakari (unknown-scope strict mode) KA WHAKAKAPI i runga i tētahi uara `share_within` kāore e mōhiotia ana e te kuaha — he ārai hohonu ki ngā ture noho kua whakaritea hē, ki ngā rekoata i kawemai mā te federation rānei e kawē ana i ngā uara pae kei waho o te rōpū kua mōhiotia e te papa.

5.5 Kotahitanga ā-taha e rua i roto i te whakaputanga

Ko te kotahitanga i roto i te horopaki o tēnei pepa he whakaritenga hangarau whaititi o §2.4 me §4. Ka whakaae ngā ture matua o ngā kaipāmu e rua ki te kaupapa herekore o te kotahitanga; ka hainatia e ngā kaiwhakahaere e rua te whakaaturanga kotahitanga; he tika te rere raraunga i waenga i ngā kaipāmu e rua; ka taea e tētahi, e tētahi rānei te whakakore i ngā wā katoa. Ko te manifest o te federation he rekoata rangatira — kei a ia tōna ake takenga mai, tōna ake kaupapa here, tōna ake mekameka whakamana, me tōna ake pātaka whakamana.

Ka tukuna te hanganga o te kotahitanga puta noa i te papa pūmanawa: te tauria whakaaetanga, te ratonga whakaaetanga, te mata huarahi, he atanga kaiwhakahaere, he ara rangitaki arotake, me tētahi rārangi whakamātautau

whakakore whānui e kapi ana i ngā panui herea-rohe, te aukati tuhi i waenga-kiritaki, te oti o te rangitaki arotake, te tikanga tohutoro, te penapena/te tawhito, ngā āhua raraunga take-pito, ngā rohe whakaaetanga, me ngā taupatupatu ingoa-ā-rohe. Kei te tatari ngā hononga federation ora i waenga i ngā kaipāpā motuhake mō te tuku tuatahi o ngā tauira maha; kua oti te hanga i te tauira ā-rua, engari kāore anō kia tukuna. E pūrongo ana a §7 i te whakatinanatanga i ngā taipitopito.

5.6 Te kawē rangatiratanga e ārahi ana ngā mema

Ka taea e tētahi mema e hiahia ana ki te wehe i tōna kaipāmu — ki te whakawhiti ki tētahi atu kaipāmu e whakahaere ana i raro i taua tauira hanganga kotahi, ki te kawē i āna rauemi ki tētahi atu hāpori, ki te whakatutuki rānei i te tika uru o te Tuhinga 15 o te GDPR — mā te kawēake paerewa. Kei roto i te kawēake ngā rekoata katoa e te mema te kaituhi, te kaitiaki rānei, te tangata e kīia ana he tangata whai raraunga; ka kawē tonu ia rekoata i tōna mekameka whakamana; ka taea e te rōpū whiwhi te whakamana i te mekameka ki te tuhinga DID kua whakaputaina e te kaipupuri manuhiri taketake, me te kore e whakawhirinaki ki tētahi o ngā kaiwhakahaere. Ka rārangi ngā rekoata e aukatia ana te kawēake e tō rātou kaupapa here (hei tauira, he whakawhitiwhiti whakaaro i tukuna i raro i ngā tikanga whakaaetanga ā-rōpū) i roto i te rārangi kawēake hei mea 'kua puritia', ā, ka whakahuatia te take o te kaupapa here.

Ko tēnei te anga hanganga o te Tuhinga 15 o te GDPR: ehara i te tauranga uru motuhake, engari ko taua ara kawēake anō e whakamahia ana e te hanganga mō ngā nekehanga katoa o ngā rekoata rangatira, kua whakatūria mō te take o te tangata-nō-ngā- raraunga hei mema. Ka pūrongo a §8 i te whakatinanatanga, tae atu ki te ara whakauru a te kaipāpā e whiwhi ana hei kati i te porowhita whakawhiti.

6. Whakatinanatanga hanganga

E pūrongo ana tēnei wāhanga i ngā wāhanga e whakatinana ana i ngā mātāpono hoahoa o §5 ki roto i te wāhere. Kei te whakaputanga ia o rātou i runga i ngā pae hanganga e rua (OVH France rangatira-motu EU; Catalyst Cloud rangatira-motu Aotearoa) ā, ka taea te whakamana mai i te pūtake wāhere me te mata API e rere ana. I runga i te tūnga rohe-IP (§13), e whakaahua ana tēnei pūrongo i ngā wāhanga hanganga me ō rātou hononga, kua ko ngā huarahi pūtake mō ia kōnae.

6.1 Pūtaketanga kōtuhi whakamunatanga taketake

Ka tatau e te pūtake takenga te SHA-256 i runga i tētahi whakarōpūtanga JSON paerewa o ngā wāhanga e hiahiatia ana, e whiriwhiria ana hoki o te

takenga. Ka whakaputa te tomokanga i te hash; ka tatau anō te kaiwhakamana, ā, ka whakatairite ki te hash kua penapenahia. Ka haere tahi te tohu arorau me te rekoata. Ka whakakore tētahi kaiāwhina āhua paerewa i ngā rārangi whiringa e whakawhirinaki ana ki te aratau whakakī — he momo hapa i puta i te whakamātautau take-whakamahinga, i reira ka whakaputa te kaiwhakariterite e huripoki ana i ngā āhuatanga rārangiwhiringa o tētahi tuhinga-iti ORM i ngā hash i wehewehe puta noa i ngā aratau whakakī, ahakoa i angitu katoa tētahi kohinga whakamātautau-wāhanga nui mō ngā utanga-taonga mea-māmā. Ko te whakatika he hipanga kotahi o te whakarite; ko te tikanga i whakaatu ai (te whakamana i ngā take whakamahinga ki ngā pātengi raraunga ora, ehara i ngā whakamātautau whakakāhua anake) kua riro hei wāhanga o ngā tikanga whakahaere o te kaupapa.

6.2 Te haina i te mekameka whakamana mō ngā hanga, whakahou, me ngā muku

Ia tuhi ki tētahi rēkōrā kua tapaina he mana motuhake, ka tāpirihia he urunga hainatia ki te mekameka taunakitanga o te rēkōrā. Ka hainatia ngā urunga CREATE e te kī hainatanga taunakitanga a te kaipā (i whakaratohia mā te whare putunga kī a te kaipā, §6.6) ā, ka herea te urunga ki te hash takenga mai o te rēkōrā. Ka tukuna ngā tomokanga UPDATE i ngā tuhi aratau-tuhinga anake ina huri ngā ara e pā ana ki te rangatiratanga (kāore i te whakauru i ngā mara pūkete pēnei i te `updatedAt`); ka hopukina te rārangi ara kua whakarerekētia. Ka whai i taua āhua anō ngā tomokanga UPDATE aratau-rapu, ā, ka tatau ēnei i te rerekētanga i waenga i ngā tuhinga āhua-mua me āhua-muri i runga i ngā `updateOne`, `updateMany`, `findOneAndUpdate`, me ngā ara e hāngai ana. Ka whakahaerehia ngā whakakore (DELETE crossings) e rua ngā paparanga āputa — he āputa aratau tuhinga, he āputa aratau rapu e kapi ana i ngā momo kotahi, puranga, me te rapu-whakakore. Ka whakaputa rāua i tētahi rēkōrā Tombstone e kawē ana i te tomokanga whakakore kua hainatia hei taunakitanga mō te whakakore; ka taea te wehewehe i ngā tombstone aratau rapu i ngā tombstone aratau tuhinga mā te mara `policy_evaluated_by`. He wāhanga motuhake e whakawhānui ana i tēnei ki te tauira rārangi whakahaere, kia whakarite hoki kia waiho e ngā muku ā-roto o te whakahaere he tohu whakamunatanga hainatia.

6.3 Te whakamana, te penapena raraunga, me te whakaurunga huarahi-pānui

Ka mahia te whakamana i te mekameka taunakitanga i te wā whakaurunga, ā, ka penapenahia ki te poraka penapena-whakamana o te rekoata: te wā o te whakamana whakamutunga, te SHA-256 o te mekameka taunakitanga kua whakaritea i taua wā, ngā tātaitanga i whakamana, me te rā whakamutunga mō te whakamana anō (taunoa 90 rā; ka taea te whakarite e te kaipupuri mā te ture matua). Ka whakaatu te kaiwhakamana i ngā tomokanga e toru: he tiro-tiro-me-pūruhi i te wā whakaurunga, he tiro-tiro pūruhi i te wā pānui taurite, me tētahi horoi kohinga kua whakaritea.

He օrite te hononga. Ka tatau e tētahi pūreka i mua i te penapena te takenga mai, ā, ka hainatia te tomokanga waihanga. Ka whakahohe tētahi pūreka i muri i te penapena i te whakamana-me-te-puna-kōrero i muri i ia tuhi, ā, ka whakaroa mā tētahi kī e rere ana hei ārai i ngā āhuatanga āwhā. He mahi whakaritea e rere ana ia rā ki ngā tauira ihirangi i hangaia e te kaupāmu, e tukatuka ana i ngā tāuru pātaka kua pau i roto i ngā puranga. Ka whakaoho te pūreka muri-tiaki i ngā wāhanga waihanga me ngā whakahōu e pā ana ki te rangatiratanga; he tātari rārangi-ara e whakakore ana i ngā ara tiaki-pukapuka kia kore ai e hurihia te pūreka e օna ake tuhi; ka karo i te kaiwhakamana ngā tiaki mō te tiaki-pukapuka anake, ā, ka pupuri i te utu whakamana-anō kia herea ki ngā panonitanga rangatiratanga tūturu.

Ka oti te ara pānui i te mata. Ia whakautu API GET mō tētahi rekoata kua tapahia hei rangatira, ka mau he wāhanga whakamana: he whakarāpopoto{whai mana, take} mō ngā whakautu rārangi, ā, he taipitopito āpiti (i-whakamana-ia, i-whakamana-anō-i muri, i-whakamana-ngā-algoritim) mō ngā whakautu taipitopito. He օrite te whakatinanatanga: ka karangahia tētahi āwhina kaiwhakapaipai kotahi mai i ia ara māmā me ia ara whakahiato.

6.4 Miihini Tuku Iho Kaupapa Here me te whakatinanatanga ā-rohe rōpū

Ka pānui te Miihini Tuku Iho Kaupapahere i te ture o te kaupupuri, ngā mematangā rōpū-iti o te mema e tonono ana, te poraka kaupapahere o te rekoata, me te mahi i tonono (pānui/tuhi/kaweake/muku). Ka whakahoki ia i tētahi kaupapahere whai hua me ngā take mārama mō te takahi i te wā ka hinga te tonono. E toru ngā kōwhiringa tātari hei whakaiti i te tomokanga i raro i te §5.4.

Ka whakawhirinaki te whakatinanatanga ā-rohe rōpū ki ngā rekoata e kawea ana i tētahicollective_id whai mana. Ka whakamana tētahi kaiāwhina i te tuakiri rōpū-iti i tukuna mai e te kaitono ki ngā here e toru (hōputu, rohe kaupupuri, mematangā kaitirotiro) ā, ka whakahoki i tētahi horopaki takitahi — takitahi nā te mea he whakapaipai noa ihote collective_id mehemeakāore he share_within: ['group'] (kāore te kuaha e whakatinana). E waru ngā ara waihanga ihirangi (Pōti, Takahanga, Pūrākau, Pukaata, Whiriwhiringa, Karere Kōrero, Waka Tahī, Rauemi) e whakaae ana ki te tohu rōpū-iti i tukuna mai i te tinana o te tonono, ā, ka tuku whakamua mā te kaiāwhina. Ka tiakina te hototahitanga ki ngā putanga o mua: ko te hunga karanga e waiho ana i tēnei wāhanga ka waihanga i ngā rekoata ā-rohe kaupupuri, pērā i mua. Ka whakaatu ngā kōwhiringa ā-ahua (UI) ā-pūmārō i te kōwhiri rōpū-iti i te taumata o te puka waihanga puta noa i ngā mata e waru.

Ka kati te aratau mātātoa rohe-kāore-i-mōhiotia i tētahi kohao hapa-tuwhera i ngā putanga o mua. He huinga uara rohe kua whakamanahia puta noa i te papaanga e tautuhi ana i te wetereo; ka whakahē ināianei ngā uara kei waho o tēnei huinga me tētahi take ingoa, mēnā kāore he rohe kua whakamanahia i taua huinga e whakaae kē ana ki te uru. Koinei te tū ā-roto o te kaupapa — *kia*

pono mō ngā mea kāore e taea te whakamana; kua e waihanga whakaaetanga mō ēnei — ā, ka whakamahia ki te kuaha ara-pānui.

6.5 Kaiwhakatika Ture Matua Rangatira

Ka taea e te kaiwhakahaere o te kaiwhakamahi te whakarerekē i te ture matua rangatira o te kaiwhakamahi mā tētahi huarahi motuhake me te atanga o mua. Ka whakaatu te kaiwhakatika i ngā taunoa o te ture matua (te aratau whakatau taunoa, te aratau kawewe taunoa, te mana whakapae taunoa, te tauira whakamuna), he ripanga kāwai e whakapiri ana i ngā tauira ihirangi paerewa, ā, ka whakaae ki ngā kāwai ritenga i tautuhia e te kaiwhakamahi, me te tautoko i ngā reo maha puta noa i te reo Ingarihi, Tiamana, Wīwī, Holani, me te reo Māori. I tuhia ngā whakamāoritanga reo Māori mā ngā taputapu whakamāori o te kaupapa (DeepL, e tautoko ana i te reo Māori i raro i te wāhere reo MI — he kōrero i hapa ai ngā kōrero a ētahi atu i waho, ā, i whakatikahia i roto i ngā tikanga o te kaupapa) ā, i tiroirohia kia tika ai te tikanga.

Ko te matapihi whakawhiti ture matua e tohu ana ka kite ngā kaipāpā e whakarerekē ana i tō rātou ture matua i tētahi pānui e kī ana kāore te panoni e whai mana kia oti te whakawhiti; koinei te ārai whakaritenga ture matua e wehe ana i tētahi tuhinga ture matua tuhi-tuatahi i tētahi e whai mana ana. He kuaha motuhake (te kuaha ture rangatiratanga) e tino whakatinana ana i te 403 mō ngā kaipāpāanga i hangaia i muri i te rā whakawhiti kāore nei i ngā wāhanga rangatiratanga e hiahia ana, me te ārai aukatinga kua whakaurua mō ngā kaipāpāanga hanganga-papa kua tohua.

6.6 Pātaka Kī o te Teneti

Kei roto i tētahi putunga kī ā-teneti ngā kī whakamunatanga me ngā kī haina o ia teneti, ā, he mahinga kei reira mō te waihanga, te tiki, te hurihanga, me te whakangaro. Ka tohu ngā kī mā ngā tuakiri kua penapenahia i roto i te poraka whakamuna o ia rekoata. Ka whakahaere te muku whakamuna o tētahi rekoata — e āraia ana e te kaupapa here mā te haki `delete_must_be_cryptographic` — mā te whakangaro i te kī whakamuna mō ia rekoata i roto i te whare kī o te kaipā, ā, ka kore e taea te whakahoki mai i te kuputuhi whakamuna o te rekoata i te āhua kua penapenahia.

6.7 Te whakaputa tuakiri ā-roto

Ka whai i te whakaritenga W3C DID [11] ngā tuakiri ā-roto a te kaiwhakarato me ngā mema, ā, ka whakaputaina i raro i te rohe o te kaiwhakarato (`/.well-known/did.json` mō te tuhinga DID a te kaiwhakarato; `/.well-known/did/members/${slug}/did.json` hei kōwhiringa mō ngā DID mema). Kei roto i ngā tuhinga DID ngā tikanga whakamana a te kaipāpā e whakamahia ana hei haina i ngā tāurunga mekameka taunakitanga; mā tētahi kaiwhakamana o waho e pupuri ana i te tuhinga DID a te kaipāpā e taea ai te

whakamana i ia tāurunga kua hainatia e kawea ana e tētahi rekoata, tae atu ki ngā tāurunga kei runga i ngā rekoata i kawea atu i raro i te §8 ki tētahi atu kaupāpā.

6.8 Rārangi Whakahaere

Ka hopukina e te taurira rārangi whakahaere ngā take e hiahiatia ana he whakataunga a te kaupupuri-kaiwhakawā: ngā hē kaupapa here, ngā tono whakatau tautohe, ngā tono muku nā ngā mema i tīmata, ā, e hiahiatia ana he whakaaetanga whakahaere. Ko ngā tūnga o te huringa ora — i hangaia → kei te arotake → kua whakataua → kua whakatinanahia (kāore rānei) — ka whakawhirinaki ki ngā whakawhitinga; ia whakataunga, ia whakatinanatangā hoki ka waiho i ngā tomokanga arai hainatia ka taea e te kaupāpā te hanga anō mai i tōna ake pātengi raraunga. Ka whakatinanahia aunoa te whakatau taunoa ā-ture o te kaupāpā i te wā ka whakawhiu te tomokanga i tōna wā āwhina.

6.9 Uhi kawea me te paparanga kitea mō te hunga kāore he kaiwhakahaere, me te rēhita arotake ōrite

Ka rere ia kawea rekoata rangatira mā roto i tētahi anga e whakahaerehia ana e ngā tikanga e toru: me mau i ia rekoata te takenga mai; me noho te rekoata ki te kaupāpā e tono ana; me whai tūranga kaiwhakahaere kaupāpā te aratau katoa. Kua wātea ināianei ngā aratau Hash me Aggregate ki ngā mema noa mā tētahi paparanga kitea e tātari ana i ngā rekoata ki te pae pānui a te kaiwhakawhiti i mua i te whakaputa i te whakaaturanga — whakawhiti rangatira; ture mō ia taumata kitea; haumaruhē mō ngā hapa uta-ā-mua o ngā rōpū-iti. Ka tuhi ngā takahi ture i tētahi tomokanga rangitaki arotake whakahaere me tētahi take whakamārama. Ka tuhi hoki ngā kawea angitu i tētahi tomokanga arotake me ngā raraunga-āpiti e hopu ana i te aratau (katoa/hash/whakakotahi), te taturanga rekoata i mua, i muri rānei i te tātari, te wehenga ā-taurira, me te tuakiri o te kaiwhakawhiti. Ka taea te hanga anō ia kawea — ahakoa angitu, ahakoa hē rānei — mai i te rangitaki arotake; kāore he kawea huna.

6.10 Te whakawhitinga rangitaki rangatira ōrite puta noa i ngā taurira ihirangi i waihangatia e te kaupāpā

Ka whakamahia te poraka metadata rekoata rangatira i runga i te taurite puta noa i ngā taurira ihirangi i waihangatia e te kaupāpā. I whakangāwari te whakawhitinga i ngā wā e taea ana (ka whiwhi ngā rekoata i te metadata i te tuhi tuatahi i raro i te hōtaka hou) ā, i kaha i ngā wā e hiahiatia ana (he tuhinga kotahi i whakakā i te takenga mai mō ngā rekoata o nāianei). Ka toro atu taua poraka metadata ki ngā mata tuhinga-iti whakaurua (EventMenu, Edition, me ērā atu) i raro i tētahi toronga mono-ā-tahi. Ka whakakāia te pūrua whakamana puta noa i te huinga kaupāpā whakahaere i runga i ngā pae whakaputa e rua; ka tapahia hei 'kāore e taea te whakamana' ngā toenga iti o ngā rekoata tawhito kāore he hash takenga, kua hei 'whai mana' — ko te

kōwhiringa hanganga he whakaatu i ngā mea kāore e taea te whakamana, kua he waihanga pūrua mā rātou.

6.11 Whakakotahitanga kaupapa here mō te kaimahi me te WebSocket

Ka whakamahi te paparanga kaimahi asynchronous i te kaupapa here ture o te kaupupuri ki ngā rekoata e waihangatia ana e ia. Ka karanga ngā kaimahi ara-waihanga e rua kei raro i te kaupapa (te tukatuka imēra-ki-te-ihirangi; te karapa tuhinga) i tētahi kaiāwhina tiritahi e whakahiato ana i tētahi horopaki kaupapa here mai i ngā metadata o te mahi taketake (te tohu kaupupuri; te tohu o te mema taketake; te tohu o te rōpū-iti taketake mēnā ka hāngai) ā, ka tautuhi ite `metadata.origin` me te `metadata.policy` ki runga i te rekoata i te wā waihanga. Ka tiakina e ngā kaimahi e whakahou ana i ngā rekoata rangatira o nāianei (te whakakī OCR o ngā koha kua tukuna; te whakarei pāpāho; te tangohanga kōrero; te whakamana reo) te huinga kaupapa here i tautuhia i te wā hanga i runga ake, ā, kāore he hiahia mō te kaiāwhina. Ko ngā kaimahi kāore e whakaputa i hirangi rangatira (te whakakotahitanga kaiwhakahaere; te tiroiro rārangi tatari; ngā putorino tuhi kōrero e whakarerekē ana i ngā rekoata rārangi tatari whakahaere) i arotakehia i roto i te pae, ā, i whakau kāore he hiahia mō te kaiāwhina. Ko te mata WebSocket kua hono ki taua tatauranga kaupapa here whai hua kotahi mā tētahi tātari pāhotanga mō ia kaiwhiwhi; i mua i te tae o tētahi karere kōrerorero ki tētahi soketi kaiwhiwhi, ka aromatawaihia te whakatau kitea mō taua soketi, ā, ka whakakorehia te karere mēnā ka hinga te tiroiro kitea. Ka rere ngā pāhotanga hononga-ā-roto kāore i whakarerekē — ka whakatauhia te kitea hononga-ā-roto i te taumata ratonga hononga-ā-roto, ehara i te taumata pāhotanga.

6.12 Taketake whakakōpaki mekameka whakamana

Ka whakakapi tētahi pūtake whakakōpaki o te mekameka taunakitanga i tētahi wāhanga iti e hono tonu ana o te mekameka taunakitanga o tētahi rekoata ki tētahi tomokanga whakarāpopoto kotahi kua hainatia, ā, ko tōna utanga ko te SHA-256 o te JSON paerewa o te wāhanga iti i whakakapia. E rua ngā aratau whakamana mō tētahi urunga kua whakakōpaki: he aratau taunoa, iti te utu, e whakaarohia ana te urunga kua whakakōpaki hei kotahi te hipanga hainatia, kua tauritia ki te hash whakarāpopoto; he aratau katoa e tiki ana i te mekameka-iti kua penapenahia i mua i te whakakōpaki, ā, ka whakamana ia urunga takitahi. He mea whiriwhiri te whakamahi i tēnei tikanga i ia hanganga kaupupuri; kāore i te taunoa. Ko te whakamahi ki ngā mekameka taunakitanga o ngā kaupupuri e ora ana, ka ārahina e te kaiwhakahaere.

6.13 Whakahou Tombstone

He tikanga taketake whakahou tohu urupā e hainatia ana ngā tohu urupā kuputuhi noa i mua, i mua i te whakaurunga o te hainatanga o te mekameka whakamana, kia ōrite ai te ara arotake puta noa i ngā hitori o te kaupā. Ka

mahi te whakahou i runga i ia kaipāpā, he idempotent, \bar{a} , ka taea te whakatā; \bar{a} , ka tāpiri i tētahi urunga kua hainatia ki te taha o ngā mara tuhinga māmā taketake, me te kore e muku i aua mara. He mea whakahaere e te kaiwhakahaere te pūmārō; kāore anō kia whakahouhia ngā toka matenga o tētahi kaipāpā whakaputa.

6.14 Uiuitanga anga hei ara arotake

I mua i ia whakatau hoahoanga i roto i te whanaketanga o te tūāpapa, ka whai wāhi he uiuitanga anga: he rēhita whakatau kua tuhia e whakaingoa ana i ngā ratonga i uiuitia, te rārangi āhuatanga mō ia ratonga, me te whakataunga. Ka tuhia ngā uiuitanga ki ngā pātengi raraunga whakaputa ā-rohe, \bar{a} , ki ngā pātengi raraunga rangatiratanga o EU me NZ. Ka aunoa te tuhi mā ngā hōtaka mō ia whakataunga; ko te āhua tuhinga he kōnae markdown mō ia whakataunga kei raro i te `docs/framework-consultations/`. Ko te tikanga o te tuhi — e toru ngā wāhi tāpiri mō ia uiui kia kore ai e pāngia te tūnga arotake mēnā ka ngaro tētahi tūmau kotahi — koinei te koha; ko te uara ko te taea te whakaputa anō me te taea te arotake, ehara i te maha o ngā tuhinga.

Ehara tēnei i te whakaatu i te hiranga. Ko te uiui te pūnaha o te kaupapa hei here i ngā whakataunga hoahoanga ki ngā taonga e kitea ana: ka taea e tētahi kaipānui ā muri ake te pātai, *he aha ngā tikanga i whakatikaia e te whakaurunga ara-pānui?*, \bar{a} , kei roto i te pātengi raraunga te whakautu. Ko te Ko te pepa mahi o te anga Tractatus [1] e tuhi ana i te tauira mai i te taha o te anga; ko tēnei pepa e tuhi ana i tētahi tauira o tēnei i te taha o te papaanga, \bar{a} , ko te pukapuka haurongo o te whakawhitiwhiti kōrero he wāhanga o te mata aromatawai (§12).

7. Te kotahitanga ā-taha e rua i roto i te whakaputanga

Kua hangaia te tauira kotahitanga ā-taha e rua mai i te tīmatanga ki te mutunga, me tētahi mata whakamana nui; kei te tatari tonu ngā hononga kotahitanga ora i waenga i ngā whakaurunga kaipupuri motuhake. Kua rite te hanganga mō te whakaurunga tuatahi maha-tauira; kāore anō ngā whakaurunga kia whakatūria.

7.1 Te whakaaturanga o te kotahitanga

Ka whakatinanahia te kotahitanga i waenga i ngā kaipupuri mana motuhake e rua hei rēkōta whakaaetanga kotahitanga kua hainatia e ngā kaipupuri e rua. Ka tautuhia e te whakaaetanga te kaupapa here herea (te whakakotahi waka, te pānui kaupapa tūhono, te whakawhitiwhiti whakaaro, te tiakitanga ngātahi kaupapa, te tohutoro marautanga whakawhānui), te āhua rerenga raraunga (ko ēhea mara e whakawhiti ana, he aha te huringa, he aha te pupuri i ia taha), te whakatau kaupapa here whakawhiti-kaiwhakahaere (ko tēhea ture e whakahaere ana i ngā rekoata i tuhia i raro i te kotahitanga; me pēhea te whakatau i ngā taupatupatu kaupapa here), te tukanga whakakore (ka taea e tētahi taha te

whakakore kotahi; he rekoata hainatia te whakakore; he ohore te horapa), me te pupuri arotake (ka pupuri ia kaiwhakahaere i tētahi kape kua hainatia o ia whakawhitinga whakahaere).

Ko te manifest tētahi rēkōta rangatira anō. Kāore e taea e tētahi kotahitanga te whakahohe mehemea kāore ngā haina kua whakamana mai i ngā rōpū e rua e hono ana ki ā rātou ake tuhinga DID. E pūrongo ana te Apiti C i te āhua o te schema i te taumata wāhanga hanganga; kua whakaroa ngā taipitopito motuhake mō ngā huinga mara whakatinana i runga i te tūnga ārai IP (§13).

7.2 Atanga Kaiwhakahaere me te rangitaki arotake

Ka whakahaere te kaiwhakahaere kaipupuri i ngā whakaaetanga hononga mā te atanga kaiwhakahaere motuhake e whakaatu ana i te huringa oranga o te hononga (tūtohutia → whakaaetia → kaha → whakakorehia) ā, ka whakaatu hoki i te rangitaki arotake. Ka waiho e ia kaupapa whakawhiti rohe — he tono hononga, he whakaae, he pātai i tukuna puta noa i te hononga, he whakakore — he urunga hainatia ki roto i te rangitaki arotake o te hononga. Ka taea te hanga anō i te rangitaki arotake i ia taha motuhake; kāore tētahi kaiwhakarite e whakawhirinaki ki ngā tuhupoka a tētahi atu mō tōna ake tūnga arotake.

7.3 Mātiri whakamātautau whakakahore

He rārangi whakamātautau-kore (i raro i te taupoki whakaurunga-tonu) e whakapūmau ana i ngā āhuatanga tūturu o te mata hononga. E tekau mā rua ngā kāwai kua hangaia hei anga: ngā pānui ā-rohe (tae atu ki te whakamana tūturu kāore he tohutoro kohinga rāhui e puta i roto i te wāhere ratonga hononga), te aukati tuhi ā-tāwāhi, te oti o te rārangi arotake, te tikanga tohutoro, te whanonga penapena/kore-tau, ngā āhuatanga raraunga take-pito (ngā wāhanga e ngaro ana; ngā wehewehenga null-versus-absent), te whakatinanatanga o te rohe whakaaetanga, me te whakatau tautohe ingoa-ā-wāhi Wāhanga-3. Ka whakamātauhia tētahi wāhanga o te matatini e tētahi kaiwhakamana maha-kaiwhakamahi ora, e whakamahi ana i te pūrua HTTP katoa ki runga i tētahi whakaurunga e rere ana; ka whakahaerehia ngā toenga ki runga i tētahi taputapu taumata-ratonga, hei whakapuaki rānei i ngā whakapuakitanga wāhere-grep tū.

Ko te whakamātautau tino kawenga i roto i te matatini he whakapuaki tū: ka pānuitia te kōnae ratonga kotahitanga hei tuhinga, ka tangohia ngā kōrero whakamārama, ā, ka whakatauritehia ngā ingoa kohinga rāhuitia ki te wāhere ka taea te whakahaere. Kua wāherehia te whakapuaki hei whakamātautau mō ia hanga (per-CI), ehara i te tiroiro kotahi i mua i te tuku; mēnā ka whānui ake ā muri ake te mata pānui o te kotahitanga, ā, ka whakaurua he tohutoro ki tētahi kohinga rāhuitia, ka hinga te whakapuaki i te wā hanga.

7.4 Tūnga whakaurunga ora

Kei te tatari ngā hononga federation ora i waenga i ngā kaipāpā motuhake mō te whakarewatanga tuatahi maha-tauira. Ko te federation carpool — he momo federation e hono ana i tētahi rōpū hapori mō te whakakotahitanga haerenga mā te koha anake — koinei te whāinga taketake mō te whakarewatanga maha-tauira. Kei te hanga tētahi kaipāpā waka i runga i te hanganga rangatira o Aotearoa (Catalyst Cloud); ka whakahohe te hononga kotahitanga maha i te wā ka whakahaere ana e rua neke atu ngā kaipāpā waka. **E tono ana ki ngā hapori, ki ngā whakahaere rānei e rangahau ana i te whakaurunga maha-ā-tauira o te kawē waka ā-hapori hei huarahi kē mō te hanganga motuhake — arā, ngā kaiwhakahaere waka ā-hapori, ngā kairangahau taurite waka, ngā hōtaka pakari ā-pāmu, ngā rōpū toitū o ngā whare wānanga, ngā rōpū waka rānei — kia whakapā atu ki te kaituhi e hāngai ana mō te whai wāhi ki te whakamātautau.** Ko ngā whakatinanatanga hononga iwi-ki-te-iwi — arā, ko te wā ka tohaina e tētahi iwi ētahi rauemi kaupapa motuhake ki tētahi atu, mā tētahi rārangi kua hainatia, ā, ka pupuri tonu i te mana whakakore katoa — ka tautokohia ā-hanganga, engari ko ngā kaiwhakahaere e ārahi ana; kāore he hononga iwi-ki-te-iwi e mahi ana i te wā i tuhia ai tēnei tuhinga.

Nō reira, ko te anga o §5.5 mō te kotahitanga ā-taha e rua heoati *hanganga me ngā hanganga kua tukuna me tētahi mata whakamana*, ehara i te *whatunga kua whakarewahia o ngā kotahitanga ora*. Ko te āhuatanga hanganga e pā ana — arā, ka taea e ngā hapori e rua te whakaae, i runga i ngā tikanga ka tautuhia e rātou, ki tētahi whakawhitinga kōrero motuhake, herea, ā, ko tērā anake — koinei tonu te mea e tohu ana ngā tuhinga e toru o Te Tiriti mō ngā hanganga matihiko: ka whakahonorehia te rangatiratanga o te iwi ki runga i ngā taonga, nā te mea ka pupuri ia iwi i tōna mana whakahaere katoa i roto i tōna ake mana noho, ā, kāore te kotahitanga e whakangaro i taua mana — engari ka whakaahei i tētahi whakawhitinga kōrero motuhake, herea i roto i te anga o te hanganga.

8. Te kawē rangatiratanga — te whakaurunga DSR

Ko te whakataunga hoahoa ono o te anga hanganga (§5.6) he mea rangatira te mema hei tangata raraunga tuatahi. Ka taea e te mema e hiahia ana ki te wehe i tōna kaipā — ki te whakawhiti ki tētahi atu kaipā i raro i taua tauira hanganga anō, ki te kawē i āna rauemi ki tētahi atu hapori, ki te whakatutuki rānei i tētahi tika tangata raraunga o te GDPR — mā te kawēake paerewa.

8.1 Te kohinga kawēake paerewa

Kei roto i tētahi kawēake kanonika i tīmataia e te mema ngā rekoata katoa e te mema te kaituhi, te kaitiaki rānei, kua ingoa rānei hei tangata raraunga. He

kohinga whārangi-nui te kaweake nei puta noa i ngā tauira ihirangi kua tapaina hei rangatira motuhake, nā te kaipāpānga i hanga, tae atu ki ngā mata whakauru mēnā ka hāngai. Ka mau ia rekoata i roto i te kohinga i tōna mekameka taunakitanga katoa, tōna poraka kaupapa here katoa, me tōna hash takenga mai. Kua hainatia te rārangi ihirangi o te kohinga e te kaipāpā taketake; ka taea e tētahi kaiwhakamana o waho e mau ana i te tuhinga DID a te kaipāpā taketake te whakamana i ia tomokanga kua hainatia i roto i te kohinga, me te kore e whakawhirinaki ki tētahi o ngā kaiwhakahaere. Ka whakaputahia te kohinga i roto i te āhua JSON, CSV, PDF rānei, e ai ki te hōputu o te tono; he ōrite tonu te ihirangi kanonika taketake puta noa i ngā whakaputanga.

8.2 Te whakawhiti e whai ana i ngā kaupapa here me te rārangi whakaatu mō te rārangi whakakorea

Ka whakatinana te kapi kaweake i ngā kaupapa here. Ka rārangihia ngā rekoata e aukatia ana te kaweake e tō rātou kaupapa here (hei tauira, he whiriwhiringa i tukuna i raro i ngā tikanga whakaaetanga ā-rōpū; he wāhanga pāpāho e herea ana e tētahi here tohatoha motuhake ā-tikanga) ki te rārangi kaweake hei mea kua aukatia, ā, ka whakahuatia te take kaupapa here. Ka whiwhi te mema i te kohinga me te rārangi whakakorea; kua hainatia te rārangi whakakorea, nō reira he taonga ka taea te whakamana e te mema hei whakamana i ngā mea i whakakorehia me ngā take i whakakorehia ai. Ko te tikanga o te kaupapa kia whakapuaki katoa i ngā mea kua whakakorehia me ngā take: ka āraia e te kuaha kaupapa tētahi whakamātau ki te whakamahi i te mana o te tangata e pā ana ki ngā raraunga hei take teka kia uru ki ngā rauemi kāore he mana tika a te mema ki a rātou, ā, ka taea te arotake i te whakautu anō.

Ko te pūnaha rārangi whakakorea te whakautu hanganga ki tētahi āwangawanga kua tautuhia e ngā kaiwhakahaere mō ngā tau: ko te tika ki te uru i roto i te Tuhinga 15 e herea ana e ngā tika o ētahi atu tāngata ka taea te tautuhi (Tuhinga 15(4)) me ētahi atu take tukatuka whaimana. Ka taea e tētahi whakatinanatanga paerewa te whakahoki i ngā mea katoa (e takahi ana i ngā tika o ētahi atu rōpū) rānei te whakahoki i tētahi wāhanga iti iho i tā te tangata i tono (kāore he whakamārama mō te take i wehe ai). Ko te tū o te hanganga, ko ia rēkōrde kua wehe, me ingoa, me whakahua te take kaupapa here, ā, ka taea te whakamana i te hononga i waenga i ēnei wāhanga e rua.

8.3 Te whakaurunga a te kaipāpā e whiwhi ana (te whakawhitinga-roto-roto)

Ka taea e tētahi mema te kawē i tana pūranga kaweake paerewa ki tētahi atu kaiwhiriwhiri e whakahaere ana i raro i taua tauira hanganga kotahi. Ka whakamana te ara kawemai a te kaipupuri e whiwhi ana i ia mekameka taunakitanga o ia rekoata ki te tuhinga DID o te kaipupuri taketake, ka whakaae ki ngā rekoata (i ngā wā e whakaaetia ana e te ture o te kaipupuri e whiwhi ana), ā, ka haere tonu i te mekameka taunakitanga ki mua — ka hainatia e te kaipupuri e whiwhi ana he urunga `ingest_via_migration` ki ia

rekoata, e tohu ana i te kaupupuri taketake me te hash o te whakarāpopototanga o te kohinga. Ka whakatūria te tuakiri o te mema mā tōna DID whakawhiti-tenanta; ka tuhia te whakawhitinga ki ngā taha e rua hei kaupapa noa o te rekoata rangatira. He mea hira, ehara i te mea kōwhiringa, te tiroiro whakaae ā-ture a te kaupāpā e whiwhi ana: ka rārangihia ngā rekoata kāore e hāngai ana te kaupapa here a te kaupāpā taketake ki ngā taunoa a te kaupāpā e whiwhi ana (hei tauira, he tūnga tūmataiti mārō ake e whakahē ana i te kaupapa here tuku whakaaetanga nui ake) hei KUA WHAKAKOREA me te take kaupapa here. Ka hainatia e te kaupāpā e whiwhi ana te rīpeka whiwhinga o te kohinga kua whakawhitia, ā, ka whakahokia ki te mema, hei whakarato i tētahi mutunga ka taea te whakamana mō te whakawhitinga.

Ko te whakatinanatanga o nāianei o te ara whakauru a te kaupāpā e kapi ana i ngā Wāhanga A–F: te whakatau DID taketake, te whakamana i te kohinga, te tiroiro whakaae ā-ture, te whakauru me te haere tonu o te mekameka taunakitanga, te hainatanga o te rīpeka, me ngā āhuatanga whakamātautau whakaurunga ā-whānui kua tohutohungia e te anga. Kua whakaritea te whakakotahitanga tuakiri i te whakatinanatanga v1 kia whakakore i te urunga-aunoa hei taunoa — me he mema kē te mema e whakawhiti ana o te kaupupuri rēhita e whiwhi ana, me whakaae rānei ā-ringa te kaiwhakahaere o te kaupupuri rēhita e whiwhi ana ki te waihanga mema i mua i te whakaurunga o te puranga. He kōwhiringa tūpato whai whakaaro tēnei: he mata haumaruru tō te urunga-aunoa mā te DID whakawhiti-pupuri rēhita e tika ana kia whai huarahi hoahoa motuhake, ā, ka whakaroa tēnei e te whakatinanatanga v1.

8.4 Ngā Tuhinga GDPR 15, 16, 17, 18, 20, 21

Ka whakatinana e te mata mutunga DSR ngā mana e ono katoa o te GDPR mō te tangata e pā ana ki ngā raraunga mā te ara kawewe kotahi, me ngā whanonga motuhake mō ia mana i ngā wā e hiahiatia ana:

- **Tūtohu 15 (Tika ki te Whai Wāhi):** te kawewe mana, pērā i te whakamārama i roto i §8.1–§8.2.
- **Tūtohu 16 (Te Tika ki te Whakatika):** ka taea e ngā mema te tono whakatikatika; ka whakahaerehia te tono e ngā kaupapa here; ka waiho e ngā whakatikatika kua whakaaetia he tomokanga hainatia ki te aho taunakitanga.
- **Tūtohu 17 (Te Tika ki te Muku):** ka taea te muku whakamuna i ngā rekoata i tuhia e te mema anake, kāore he tika kē atu e pā ana, i runga i te tono — ka whakangaromia te kī whakamuna mō ia rekoata i roto i te whare putunga kī o te kaupāmu; ka kore e taea te whakahoki mai i te kuputuhi whakamuna; ka tuhia e tētahi tohu muku kua hainatia te muku. Ka whai i ngā tikanga taunoa ā-ture ngā rekoata e pā ana ki ētahi atu rōpū (hei tauira, he kōrero ki te pūrākau a tētahi atu mema; he koha ki tētahi whakawhitiwhiti kōrero a ngā kaituhi maha) mō te muku mā te whakaaetanga ā-rōpū — ka whiwhi te rārangi whakahaere a te kaupāmu i te tono, ka uiuitia ngā rōpū e pā ana ki te tukanga a te kaupāmu, ā, ka

whakatinanahia te whakatau ka puta me tētahi ara arotake katoa.

- **Tūtohu 18 (Te Tika ki te Here):** ka whakatinanahia te here hei whakahau rautaki e aukati ana i te tukatuka i te wā e tatari ana te tono; ko te whakahau nei hei kaupapa tuhinga rangatira.
- **Tūtohu 20 (Te Tika ki te Kawe Raraunga):** te kohinga paerewa o §8.1, me te ara whakauru a te kaupāpā e whiwhi ana o §8.3 hei whakaoti hanganga.
- **Tūtohu 21 (Te Tika ki te Whakahē):** ka tuhia te whakahē ki te rēhita e hāngai ana, ā, ka horapa mā te kuaha kaupapa here hei aukati tukatuka mō ia rēhita.

Ka whakatinanahia te matapihi whakautu 30-rā mō te Tuhinga 15 e tētahi taima rangitaki arotake; ka whakaoho i tētahi whakatūpato ki te rārangi whakahaere o te kaupapuri whenua mēnā ka mahue ngā whakautu.

8.5 Te taupatupatu ki ngā whakawāwā o te Tuhinga 17

Ehara i te mea kāore te āwangawanga mō te tika ki te muku i waenga i te Tuhinga 17 me ngā whakawātea o te Tuhinga 17(3) (te herekore ki te whakaputa kōrero; ngā kerēme ture) i te mea kāore e kitea; he tūturu taua āwangawanga. Ka whakaritea e te hanganga te whakatau i runga i te mārama, i roto i te ture matua o te kaiwhakamahi, me te whakatinana mā ngā kaupapa here, me te ara arotake katoa. Ka whakamanahia te tono muku a tētahi mema i runga i te whakaaetanga a te whakatau ā-ture; ki ngā wā e hiahiatia ana e ngā tikanga whakaaetanga ā-rōpū he tukanga maha-taha, ka tuhia taua tukanga, ā, ka hainatia te whakataunga ka puta (muku, whakakore, pupuri). Mā tētahi kaitātari o waho e pānui ana i te rangitaki arotake, ka taea te hanga anō i te tika o te wehenga o te Tuhinga 17 i whakamahia, nā wai, i runga i te aha, me te aha hoki te hua.

9. Atanga Whakahaere Kaiwhaiwhai

Ka whakaatu te atanga whakahaere i te tū ā-ture o te tūāpapa, te tikanga whakawhitihiti kōrero, te hītori whakatau, te pukapuka arotake whakawhitihiti anga, te mata kōrero, me te mata arotake mō ngā kaiwhai pānga. He mata e anga ana ki ngā kaiwhai pānga, ā, i whakarite kia mārama ki ngā kaiwhakahaere pūtea o te parohe me ngā kaumātua hapori, kua ki ngā kaihangarau anake. Kei te noho te atanga ki tētahi subdomain kiritaki o te pokapū whakahaere kua tohua, ā, ka tāruatia ki ia subdomain kiritaki mā tētahi taura ōrite. Kua tukuna ngā Wāhanga 1 ki te 7 i te rā i tuhia ai tēnei pepa; mā te Wāhanga 6 (kōrero whai wāhanga) me te Wāhanga 7 (whānuitanga ā-momo hua) ka whakawhānui i te atanga mai i te arotake pānui-anake ki te whakahaere whai wāhanga.

E rua ngā taura o te whai wāhitanga o ngā kaiwhai pānga e rere ana puta noa i te mata. Ko te tuatahi ko **te tono**: ka tuku te kaiwhakahaere kaupapuri i

tētahi tono a ngā kaiwhai pānga kua hainatia, e kī ana i te ingoa o te tangata kua tonoa, ngā mata kua whakatuwheratia ki a rātou, me te rā paunga o te tono; ka whakaae te kaiwhai pānga mā tētahi URL kotahi anake; ka mau i te tūnga kuaha-tika kotahi tonu te wānanga ka puta, pērā i tētahi wānanga mema, ā, ka herea te pae pānui ki ngā mata i whakatuwheratia mō rātou. Ko te tuarua ko **te tono**: i te wā e rapu ana tētahi kaiwhaiwhakaaro ki te uru me te kore tono i mua, ka tukuna e te papaanga te tono ki te tikanga mō ia kaipupuri e tautuhia ana i roto i tana ture. Ko ngā pūtake hanganga — te tuku tono, te tohu whakaae, te ara arotake kua hainatia — he ōrite puta noa i ngā kaipupuri, ā, ko ēnei ngā mea e whakamārama ana ngā wāhanga ā-wāhanga i raro nei; ko te tikanga tono nā te kaiwhaiwhakaaro i tīmata ka tautuhia e te ture mō ia tauira o te Hāpori, ā, kāore i tautuhia e tēnei pepa. Ko ngā ture tūāpapa i whakaratohia e te papaanga kua tuhia ki te Matapihi Ture Tūāpapa (§9.1), engari ehara i te mea ārahi.

9.1 Te Matapaki Ture (Wāhanga 1)

Ka whakaatu te Kaiwhakaatu Ture Matua i te kohinga pūmau kua tauritia e te tūāpapa, hei aro ki ngā kaipartener, o ngā puna matua e toru (ngā ture pakari o te kaupapa, ngā tūemi mahara kāore e whakaitia, me ngā mātāpono whānui o te tūāpapa Papanga 1). Ko te kaiwhakaatu he tauira uta-whārangi-markdown: kāore he huarahi API, kāore he tiki ā-huringa; he kōnae HTML tūturu te kaitirotiro e uta ana i te markdown mā runga HTTPS, ā, ka whakaatu. He mea whai whakaaro tēnei tauira: ko te kaitirotiro te taonga māmā rawa atu, ā, ka taea te arotake e tētahi kaitirotiro e mōhio ana ki te pānui HTML me te markdown.

9.2 Kaiwhakaatu o te Ture Whakawhitiwhiti Kōrero (Wāhanga 2)

Ka whai i taua tauira anō te kaitirotiro o te Ture Whakawhitiwhiti Kōrero, e whakaatu ana i te pukapuka ture whakawhitiwhiti kōrero mō ngā kaiwhakahaere (rārangi hongere, auau, rārangi whakahē, ture mō ngā tuhinga tuarua anake, kua rawa e tuku). Ko te putanga kua whakaputaina ināianei ka kati i āna tūemi urunga-kaiwhakahaere i raro i te whakatau pai rawa atu a tētahi māngai kua whakawhiwhia mana e te kaiwhakahaere; kei te tatari ngā whakahōu ā muri ake mō te whakaaetanga a te kaiwhakahaere.

9.3 Kaiwhakaatu Rārangi Whakatau (Wāhanga 2)

Ka whakaatu te kaitirohanga Rārangi Whakatau i tētahi rārangi kua whiriwhiria o ngā whakatau nui puta noa i te whanaketanga o te hanganga (ngā pūtake hanganga, tūnga kaiwhakarato, ture tūmataiti me ngā ihirangi, tikanga tukanga, whakangungu me te AI). Ka hono te kaitirohanga Ture Matua me te kaitirohanga Ture Whakawhitiwhiti ki te kaitirohanga Rārangi Whakatau i roto i ā rātou wāhanga Hoa. Ko te ara katoa e taea ana e ngā kaiwhaiwhakaaro te pānui — Ture Matua → Ture Whakawhitiwhiti → Rārangi Whakatau — ka taea te whakaterere i runga i ia subdomain o te tangata noho.

9.4 Te kaitirotiro uiui anga (Wāhanga 3)

Ka whakaatu te kaitirotiro uiui anga i te pukapuka rekoata uiui mā te atanga HTML e taea te pānui e ngā hunga whai pānga. Ka whakaatu te kaitirotiro i tētahi rārangi whakarāpopototia mā te tohutoro tuhinga (kotahi te rarangi mō ia whakatau hanganga, me ngā ratonga i uiuitia, ngā tikanga, ngā whakataunga, me ngā rā) me tētahi tirohanga taipitopito mō ia whakataunga e whakaatu ana i te rārangi katoa o ngā tikanga mō ia ratonga me te ara whakataunga. He pānui-anake te kaitirotiro; ko te pukapuka pūtake e tuhia ana e ngā tuhinga aunoa a te papaanga hei tuhi i ngā uiuitanga; ka pānui te kaiwhaiwhakaaro, engari kāore ia e tuhi.

9.5 Tūhonohono manuhiri mō te hunga whai pānga (Wāhanga 4)

Ka whakaaetia e tētahi wānanga manuhiri motuhake mō te kaiwhai pānga te uru pānui-anake ki te atanga whakahaere, me te kore e hiahiatia he rēhitatanga katoa hei mema nohoanga. Ka tuku tētahi kaiwhakahaere papanga i tētahi tono ki te kaiwhai pānga; he rēkōrā hainatia te tono e tohu ana i te ingoa o te kaiwhai pānga, ngā mata kua tonoa, me te rā pau o te tono; ka whakaae te kaiwhai pānga mā tētahi URL kotahi-anake; ka mau tonu te tūnga o te kuaha kaupapa here i taua wānanga, pērā i tētahi wānanga mema, engari he herea te pae pānui ki ngā mata kua tonoa.

Ko te āhuatanga hanganga, ko te arotake a te hunga whai pānga he mahi tahi ki tētahi rekoata rangatira: ka tuhia ki te rangitaki, ka hainatia, ā, ka taea te hanga anō ia tono, ia whakaae, ia pānui katoa i te ara arotake. Ka taea e tētahi kaiwhakawhiwhi pūtea, tētahi kaiarotake kaupapa here rānei, kua arotake i te atanga whakahaere o te tūāpapa, te whakaputa i tētahi rekoata ka taea te whakamana mō ngā mea i arotakehia e rātou, āhea, me te putanga o ngā rauemi taketake i tirohia.

9.6 Mata arotake o ngā kaiwhaiwhakaaro (Wāhanga 5)

Ka whakakotahitia e tētahi mata arotake whakamutunga ngā rauemi o te atanga whakahaere ki tētahi tūtohu kotahi e taea te whakaterere mō te whakamahinga a ngā kaiwhai pānga: he tomokanga kotahi-whārangi e ingoa ana i ia tuhinga o te Ture Matua, ia tomokanga Rārangi Whakatau, ia ture o te Ture Whakawhitiwhiti Kōrero, me ngā uiuitanga anga tata nei, ā, he hononga hohonu ki ia mea. Ko tēnei mata te mutunga tūturu o tētahi tono o te Wāhanga 4; ka tae te kaiwhai pānga e whakaae ana ki te tono ki runga i te mata arotake, ā, ka taea e ia te whakaterere i reira.

9.7 Kōrero ā-whaipānga (Wāhanga 6)

Ka hurihia e te mata kōrero o te Wāhanga 6 te atanga whakahaere pānui-anake hei atanga whai wāhanga. Ka taea e ngā hunga whai pānga te tuku kōrero mō ngā tuhinga o te Ture Matua, ngā tāurunga Rārangi Whakataunga, me

ngā ture o te Ture Whakawhitiwhiti; he tuhinga rangatira anō ngā kōrero, ā, ka whakamahia ki a rātou ngā pūnaha takenga mai, kaupapa here, mekameka taunakitanga, me te pūnaha penapena whakamana kotahi tonu. Ka whakautu te paparanga reo ā-horopaki o te tūāpapa ki ngā pātai a ngā kaiwhai pānga mai i te kohinga kua whakaritea, e tiakina ana e te atanga whakahaere anō, ā, ko te kohinga tēnei hei mata tohutoro. He paparanga te ārai mō ngā whakaahuatanga hē: mā tētahi whakahau pūnaha kua whakakaha ake e whakawhāiti te tauira reo kia whakahē i ngā pātai kei waho o te kohinga, ā, mā tētahi tātari mō te tikanga tohutoro e whakakore ngā whakautu kāore i tohutoro ki tētahi puna o te kohinga.

9.8 Whānuitanga-ā-momo-hua (Wāhanga 7)

Ka whānui ake te Wāhanga 7 i te mata kōrero o te Wāhanga 6 puta noa i ngā momo hua o te papanga. Ka kawea ia momo hua i āna ake ara rōpū kōrero, tōna ake pukapuka kupu, me ōna ake tauira tohutoro. Ko te Wāhanga 7.A e tuku ana i te whānuitanga mō ia momo hua; ko te Wāhanga 7.B e hanga ana i te kohinga kōrero mō ngā tauira ā-ao e tiritirihia ana; ko te Wāhanga 7.C e hono ana i te mata whakaatu kōrero whakaae kua whakamanahia kei roto i ngā whārangi tirohanga mds1 mā ngā tauranga hihiri me tētahi atanga API tūmatanui mō te widget; Ko te Wāhanga 7.D te mata hononga mō te paparanga kōrero, e whakamahi ana i taua hanganga hononga-ā-rua i whakamārama i te §7 (ka tohatohahia te matatini whakamātautau-kore, ehara i te motuhake; ko te hononga kōrero a ngā hunga whai pānga puta noa i ngā Hapori he tauira motuhake o te tauira whānui ā-rua); Ko te Wāhanga 7.E e tuhi ana i te ture whakatū-whakawhitiwhiti me te rārangi pukapuka e tuhi ana i te whakaaetanga o te mata.

Ko te pānga whakakotahi o ngā Wāhanga 1–7 he mata whakahaere kaiwhaiwhakaaro e taea ana te pānui, te arotake, te whakaterere, te whai wāhi, e mōhio ana ki te kotahitanga, ā, e whakamahia ana i runga i te kotahitanga puta noa i ngā hua o te papa ngā momo — i te utu o tētahi mata whakamana nui (ko te matatini whakamātautau-kore o te kotahitanga-ā-rua te kaiwhakarato kotahi nui rawa atu) me te utu āpiti o te whakahaere i te tuhi kōrero mō te anga-uuiui i ia toronga hanganga.

10. Tauira mahi: rangatiratanga ingoa whakawhiti-rohe i waenga i ngā wāhanga reo e rua kua whakaritea

E whakaatu ana tēnei wāhanga i te tauira kotahitanga ā-rua mā tētahi tauira mahi, nā te kaituhi hāngai i tuku mai i āna mahi hoahoa marautanga e haere tonu ana. E pā ana te tauira ki te whakaurunga marautanga i tētahi horopaki kura tuatahi, engari ka whānui ake te tauira hanganga ki ngā hapori e rua ahakoa hea, mēnā ka tutaki ā rātou tūnga rangatiratanga raraunga ki tētahi wāhi motuhake o te mana whakawhiti-ā-rohe. He whakamārama motuhake

kei te wātea i roto i te momo kāinga carpool i whakahuahia i §11: mā te carpool e wehe te pūtake hononga-ā-roto i te mata whānui ake e anga ana ki ngā mema o ētahi atu momo kāinga, ā, koinei te take iti rawa ka taea ai te arotake motuhake i te whanonga hononga-ā-roto o te taurira. E whakaatu ana tēnei taurira mahi i te hononga-ā-roto i waenga i ngā rohe e rua e kawe ana i ngā ihirangi mana motuhake; e whakaatu ana te whakamārama carpool i te hononga-ā-roto i waenga i ngā taurira e rua o taua momo kāinga kotahi.

10.1 Te whirihoranga

Whakaarohia e rua ngā wāhanga reo ā-horopaki, ia mea e mahi ana hei kaupāpā rangatira i runga i te tūāpapa:

- **He wāhanga mātauranga otaota** mō ngā tipu ā-rohe — hei taurira, he wāhanga Flora o New South Wales, nā tētahi whare wānanga otaota e tiaki ana i te taksonomiki kua whakamanahia, ngā ingoa pūtaiao, te tohatoha, ngā tuhipoka taiao, me ngā tohutoro whakawhiti ki ngā puna mātauranga. Ka tiakina e ngā kaupupuri o te wāhanga te ihirangi i raro i tētahi tukanga whakapai tonutanga: ka whakamanahia, ka whakaurua ngā kitenga hou; ka tukuna ngā whakatikatika i raro i te mana kua hainatia; ko te kohinga te puna mana mō ngā tohutoro otaota i roto i te pae o te wāhanga.
- **He wāhanga whakahou reo** mō tētahi reo taketake i taua rohe anō — hei taurira, he wāhanga Reo Taketake o New South Wales, nā tētahi mana reo ā-hapori e whakahaere ana, ā, ko ia te kawenga mō te pukapuka kupu kua whakamanahia, te wetereo, te takenga kupu, te horopaki ahurea, me ngā mahi whakahou e haere tonu ana. E pupuri ana ngā rangatira o te wāhanga i te mana whakahaere mō te reo me ōna whakamahinga, tae atu ki te āhua e ingoa ai e te reo ngā mea o te ao tūturu.

Ka puta he mana whakawhiti-rohe i te *ingoa o ngā otaota*. Ka taea e ia otaota i roto i te wāhanga otaota te mau — i te taha o tōna ingoa pūtaiao — he ingoa taketake nō te pukapuka kupu o te wāhanga reo. I ngā rā o mua, i noho ēnei ingoa taketake i raro i te mana whakahaere o te wāhanga otaota hei tāpiritanga pukapuka. He whakataunga tōrangapū kia whakahokia te rangatiratanga reo e whakawhiti ana i te mana ingoa mai i te wāhanga otaota ki te wāhanga reo: mai i tēnei wā, ko te ingoa taketake mana mō tētahi otaota he aha rānei tā te wāhanga reo e kī ana.

10.2 Te Kotahitanga hei Whakautu Hanganga

Ko te whakautu hanganga he kotahitanga ā-taha e rua i waenga i ngā wāhanga e rua, me tētahi whakapuakitanga e ingoa tika ana i te pāhekoheko herea:

- **Te kaupapa herehere:** he tohutoro ingoa whakawhiti-ā-rohe. Ka taea e te wāhanga otaota te uiui ki te wāhanga reo mō te ingoa taketake paerewa o tētahi otaota, i runga i tētahi ingoa pūtaiao takirua. Ka pupuri te wāhanga reo i te mana katoa mō te ingoa; ka pupuri te wāhanga otaota i te mana katoa mō te taksonomī pūtaiao.

- **Rere raraunga:** mā tētahi pātai hanganga a te wāhanga otaota ki te wāhanga reo e ingoa ai te ingoa pūtaiao rua; ko te whakautu ko te ingoa taketake mana (**kāore** rānei e **mōhiotia** mēnā kāore anō te kohinga o te wāhanga reo kia ingoa i taua otaota). *Hetōnga-i-te-wā-e-hiahia* te rerenga; kāore he whakawhitinga puranga e tohu ana. Ka taea e te wāhanga otaota te penapena i ngā whakautu me tētahi rā paunga ka taea te whakarite e te kaipā.
- **Whakatau kaupapa here:** ko te ture whakahaere o te wāhanga reo e whakahaere ana i te whakautu. Mēnā kei te arotake te kohinga rauemi o te wāhanga reo, ā, kei te tatari he ingoa mō te wā poto, ka kawea e te whakautu taua tūnga hei mara `caveats_added` i te tomokanga o te mekameka whakamana; ka whakaatu te wāhanga otaota i taua tūnga ki ōna kaiwhakamahi.
- **Te Whakakore:** ka taea e tētahi taha te whakakore i ngā wā katoa. Ka horapa tonu te whakakore; ka mutu te pūwāhanga otaota i te tuku pātai; ka pau ngā whakautu kua penapenahia i runga i ā rātou rā paunga. Kāore he rerenga raraunga e haere tonu i muri i te whakakore.
- **Arotake:** ia pātai, ia whakautu hoki ka waiho he urunga me te hainatanga ki te mekameka taunakitanga i ngā taha e rua. Ka taea e tētahi o ngā rōpū te hanga anō i te hītori katoa o te kotahitanga mai i tōna ake pātengi raraunga.

10.3 Te wheako o te ākongā

Ka whakaohohia e tētahi ākongā e whai ana i te marautanga tētahi pātai — “*He aha te ingoa taketake mō Eucalyptus camaldulensis?*” Ka tukuna e te tuku marautanga o te papaanga te pātai ki te wāhanga otaota (ko ia te kaitiaki o te ingoa pūtaiao *rua* hei puna mana) ā, ka whakamua te kotahitanga i te pātai-iti mō te whakatau ingoa ki te wāhanga reo. Ka *whakaritea* te whakautu *mai i te whakakotahitanga o ngā wāhanga reo ā-horopaki, ehara i te mea nō tētahi tauira reo nui ā-mua*. Kua aukatihia ā-hanganga te whakamatapae nā te mea kāore he tauira e whakaputa ana i te whakautu mai i tētahi tohatoha tūponotanga i runga i ngā raraunga whakangungu; ko te wāhanga reo e whakarato ana i te tohutoro, ā, ka whakaatu he tohu e tohu ana kua whakaratoa te whakautu e te hononga pūnaha — ehara i te mea he mea whakamīharo ā-hangarau ki te ākongā, engari nā te mea he uara o te marautanga te āhei ki te whakamana.

Ko te āhuratanga hanganga e pā ana, ko te whiwhi a te ākongā i tētahi whakautu mana kua whakaritea, kāore he Mātaurau Reo Nui (LLM) i roto i te tukanga. Kua aukatihia ā-hanganga te whakaputa kōrero hē, nā te mea kāore he tauira e waihangā ana i te whakautu mai i tētahi tohatoha tūponotanga i runga i ngā raraunga whakangungu; he pātai honohono tēnei ki tētahi kohinga kua whakaritea e whakahaerehia ana e te kaipupuri mana. Ki te kore he whakautu o te kohinga raraunga, ka whakahoki te hononga **kāore i te mōhiotia** — ka whakamōhiotia ki te ākongā kāore te pūnaha i te mōhio, he whakautu hanganga tika kāore e taea e te kōrero whakakī māia o tētahi tauira matatau te tuku.

10.4 Ngā akoranga hoahoanga

E hoki ana ngā akoranga e toru mai i tēnei tauira mahi ki ngā here hanganga o §5:

1. **Ko te whakawhitinga rangatiratanga ā-rohe he mahi a te kotahitanga.** Ina huri te mana whakahaere mō tētahi kāwai tohutoro i tētahi hapori ki tētahi atu (rauropi → wāhanga reo mō te ingoa otaota; iwi → rōpū mō tētahi kaupapa tiritahi; pārihi → rohe hāhi mō tētahi maramataka kaupapa tiritahi), ko te mahi hanganga he hainatanga i tētahi whakapuakitanga kotahitanga hou, ehara i te whakawhiti raraunga i waenga i ngā kaipā. Ka noho ngā raraunga ki te wāhi e noho ana te rangatira o ngā mana; ka whakamōhio te kotahitanga ki te kaiwhakamahi kei hea ia e pātai ai.
2. **He whakaurunga hanganga rerekē te tuku marautanga mā ngā wāhanga honohono ā-horopaki, i te whakawhitiwhiti whakautu nā te LLM i whakarite.** He take kaha ā-taurite mō te hanganga hei aukati i te tuku ihirangi mā te LLM te whakamahinga o te tuku marautanga: i te mea he ākongā te tauira, me whai mana te whakautu, ehara i te mea ā-tūponotanga.
3. **Ko te mara kaupapa here here o te whakaaturanga hononga he mea kawē kawē.** Kāore tētahi kotahitanga tautuhi ingoa e whakaae kia uiui te wāhanga otaota ki te kohinga katoa o te wāhanga reo; engari, ka whakaae anake ki te āhua uiui kua tautuhia. Ka whakahē te ratonga kotahitanga o te tūāpapa i ngā uiui kei waho o te āhua kua kīa i te pūrongo. Koinei te āhuatanga hanganga e āhei ai ngā hapori rangatira e rua ki te kotahitanga mō tētahi whakawhitinga kōrero motuhake, herea, me te kore e tuku i tō rātou mana ki ētahi atu mea.

He momo akomanga honohono e hono ana — i waenga i te wāhanga kohinga o te whare taonga me te wāhanga rawa ahurea o te hapori taketake; i waenga i te wāhanga whakamahere o te kaunihera ā-rohe me te wāhanga pae taonga tuku iho o te hapū; i waenga i te wāhanga marautanga o te rohe kura me te wāhanga reo ā-hapori — e ōrite ana te āhua. Ka whakaratohia te tauira Flora Ngā Reo hei whakaahua paerewa nā te mea ka whakaatu i ngā āhuatanga *mana rangatiratanga raraunga* me te *whakawhitinga mana mātauranga* i te wā kotahi.

11. E ono whakaritenga āhua-kāinga — he tauira nō tētahi whānau tauira

Ka whakapuaki te hanganga mā te tauira whakatakotoranga. Ehara i te mea he hanga kotahi anake te whakaritenga kaipupuri; he whakatuturutanga tauira whakatakotoranga tēnei, ā, mā te tauira whakatakotoranga e whakarite ngā pūtake o te rēhita rangatira, te whanonga tuku tuku kaupapa here, ngā tikanga whakahaere kotahitanga, ngā kaiwhai pānga UI whakahaere, me te āhua o te

rārangi whakahaere, ā, mā te whakaritenga motuhake a te kaiwhakamahi ka whakatika i ngā mea kua waiho tuwhera e te tauira: te ture tūtohu, te hanganga mema, te āhua rōpū-iti, te rohe reo maha, te rōpū paparanga reo ā-horopaki, ngā manakohanga kaiwhakarato i roto i te anga here kaiwhakarato.

Ko te painga whakahaere o te tauira whakarite he mea whakamātautau whakarite tētahi whakaritenga momo-kāinga hou, ehara i te hanga anō. Ko te painga hoahoanga he mea arotake e tētahi arotake i tētahi whakaritenga momo-kāinga kotahi, ā, kei te arotake ia *i taua hoahoanga kotahi* e whakamahia ana e ngā whakaritenga momo-kāinga katoa; he ōrite ngā whakamana rangatiratanga puta noa i te whānau nā te mea he ōrite te tauira.

Ko te tūāpapa i purongo ai i tēnei pepa he whakatinanatanga tūtohu o te hanganga e whakamārama ana. I hangaia te tūāpapa e tētahi rōpū iti i Aotearoa, i raro i ngā here aukati kaiwhakarato me ngā here rangatiratanga — ko ēnei anō ngā here e tiakina ana e te hanganga. Nā te hanga i raro i ēnei here i whakaatu i ngā momo hapa e tiakina ana e te hanganga, tae atu ki te whakamārohirohi, i raro i te pēhanga utu, kia huri ki ngā hanganga ā-ture o Amerika mō te rokiroki, mō te tukatuka rānei. Ko te ārai a te hanganga ki taua whakamārohirohi, i kitea i te wā hanga, he koha nōna anō e tuhia ana e tēnei pepa.

Kei te whakahaere te whānau tauira: e rere ana ngā whirihoranga momo-kāinga i runga i ngā hanganga rangatiratanga o te EU (OVH France) me ngā hanganga rangatiratanga o Aotearoa (Catalyst Cloud). Kāore ngā ingoa rohe-iti a ngā kaipānga motuhake i whakarārangiā i roto i tēnei pepa, ā, kua whakakorehia kia whakaiti i te whakaaturanga mata-whakaeke; kei te wātea ēnei ki ngā kaiarotake mana mā te pātai tika ki te kaituhi e hāngai ana. Ia whakaritenga momo-kāinga e whakahaere ana ināianei ka whakamana i āna mema, ā, ka whakahoki i te whakautu 302 / 403 ki ngā tono ihirangi kāore i whakamana — koinei te haina whakahaere o tētahi kaipānga ora. Kei te hanga tētahi whakaritenga Carpool i runga i te hanganga rangatiratanga o Aotearoa hei whakaurunga tuatahi o te hononga maha-āhua (multi-instance federation); ka wehewehe a Carpool i ngā pūtake hononga me ngā pūtake whakahaere papamuri, kāore e whakaatu i te mata katoa e anga ana ki ngā mema pērā i ērā atu momo kāinga, ā, nā reira koinei te whakaaturanga mātauranga tino mārāma o te pūtake hononga. Kei te wāhanga §7.4 te tono ki ngā hapori, ki ngā whakahaere rānei e hiahia ana ki te whai wāhi ki te whakamātautau.

Te momo kāinga	Te kaupapa (he kōwhiringa mai i ngā tonono pea)
Whānau	Paetukutuku whānau whānui Māori e kawē ana i ngā rauemi whakapapa ā-whakatipuranga me ngā kōrero ā-waha; ko te rangatiratanga ihirangi e hāngai ana ki Te Tiriti he āhuatanga hanganga, ehara i te mea tāpiri noa
Rūnanga	Paetukutuku o te Kaunihera Iwi (hāpori) e kawē ana i ngā meneti, ngā whakataunga a ngā komiti, me ngā whakamārama taonga e pā tika ana ki ngā mana o Te Tiriti; ko te tiritiri i waenga i ngā iwi mā te kotahitanga ā-taha e rua, ehara i te whakapuakitanga whānui puta noa i te papaanga
Komiti	Ngā hanganga rōpū whiriwhiringa mō ngā kotahitanga hākinakina, ngā rōpū ngaio, me ngā hāpori ā-rohe e hira ana te takenga o ngā whakataunga — i hangaia te mekameka tohu hainatanga o te tauira ihirangi whiriwhiringa mō tēnei tonu
Hāpori Māori	Paetukutuku whakakotahitanga ā-iwi maha e whakawhitiwhiti ana mā te kotahitanga ā-taha e rua i waenga i ngā iwi rangatira; ka pupuri ia iwi i tōna mana katoa; ko ngā pūtake kotahitanga te whakautu hanganga
Whakahaere	Ngā rōpū whakahaere (pōti hāpori, pōti kura, kaunihera pārihi) e whakarato ana i ngā mahi mō ngā mema katoa (ngā meneti, ngā whakataunga) me ngā mahi tūmataiti (ngā mema, ngā rauemi tuhi tuatahi, ngā whakawhitiwhiti kōrero a te komiti) — mā te kaupapa here tiritiri ā-roto me te whakatinanatanga ā-rōpū ka taea e tētahi tūāpapa kotahi te tautoko i ngā mahi e rua

Te momo kāinga	Te kaupapa (he kōwhiringa mai i ngā tonono pea)
Te mematangā	Ngā rōpū ā-motu me ō rātou peka ā-rohe — he rōpū ā-motu e hiahia ana āna peka ki ā rātou ake rārangi mema me te maramataka kaupapa, kua honohono ki te rōpū matua mō ngā whakawhitinga kōrero nui ake; koinei te hanganga matua mō <i>ngā Vereine</i> o Europi, ngā kotahitanga hākinakina, ngā rōpū ngaio, me ngā kotahitanga kaimahi

Ka whānui ake te momo i whakawhanakehia i konei i tua atu i ngā momo kāinga ki tētahi karaehe whānui ake o ngā āhua whakahaere, kāore e whakapuaki ā rātou hiahia hanganga takitahi, engari ā rōpū. Ko ngā rōpū whakatau tahi ā-umanga i ngā rohe ture e whakaurua ana te whiriwhiringa ā-rōpū ki roto i te ture tūtohu — arā, ngā kaunihera kaimahi i raro i te Mitbestimmungsgesetz o Tiamana, ngā kaunihera māngai i raro i te Arbeitsverfassungsgesetz o Ōtiria, te conseil d'entreprise o Belium, ngā whakaritenga samarbejdsudvalg o Scandinavia — he āhua whakahaere e kore e eke ngā hiahia rangatiratanga raraunga o ēnei ki ngā mana o te tangata takitahi mō ā rātou raraunga anake. Ko ngā rōpū mahi tahi, i reira he ōritetanga ngā mana mema, ā, ka whakahaerehia ngā whakataunga e ngā hui mema, e whai ana i ngā whakaritenga hanganga kotahi: te kotahitanga ā-rua i waenga i ngā rōpū mahi tahi i ngā mana whakahaere rerekē; ngā rēhita rangatira me te kawē ā-mema; he atanga kaiwhakahaere mō ngā hunga whai pānga e tautoko ana i te whakawhitihiti whakaaro ā-rōpū. Ka whai i taua āhua anō ngā kotahitanga kaimahi i ngā mana whakahaere kua whakaurua ki roto i te pūnaha. Kāore te hanganga e here ana i tētahi āhua whakahaere kotahi; engari ka whakaatu i ngā pūtake e hiahia ana e ia āhua.

Ko ētahi atu momo kāinga i roto i te whānau tauira — whānau (aronga ki te whakapapa), pārihi (hāpori hāhi ā-rohe), pakihī (rārangi mema me ngā pānui mō ngā rōpū kaiwhakahaere iti), me te kaikawe waka (whakakotahitanga haerenga, kei te hanga, he kaikawe i te whakaurunga tuatahi o te hononga maha e whakaarohia ana) — he tauira tūturu nō taua whānau tauira kotahi. Ehara tēnei rārangi i te mea tūturu; ko te painga o te tauira, ka taea te whakarite i ētahi atu momo kāinga anō me te kore whakarerekē i te hanganga.

11.1 Ngā rōpū paparanga reo ā-horopaki (tuhituhī whakamua ki te Pepa B)

Ka honoa ia whiriwhiringa momo-kāinga ki tētahi rōpū *paparanga reo ā-horopaki* — he tauira reo mō ia momo-kaiwhakamahi i whakangungua ki ngā ihirangi ake

o te kaiwhakamahi, me te tino whakahaere whakangungu. Ka tukuna ngā rōpū mō ngā momo-kāinga e whakamahia ana i te wā nei; kei te tatari ngā rōpū kua tohua mō ētahi atu momo-kāinga ki te kaiwhakamahi tuatahi o ia momo i mua i te whakahohe, i runga i ngā tikanga o te kaupapa kia kaua e whai whakangungu whai-whāinga. Ko ngā kitenga ā-taurite — tae atu ki tētahi kohinga tuhia o ngā whakamātautau whakarerekē taumaha e whakaatu ana i te hekenga ōrite, ngā ture e whā "no-X" mō te tiaki raraunga whakangungu, te hanganga whakatau hokinga-ki-CPU, me ngā hua arotake mō ia rōpū — kua pūrongo motuhake i roto i te whakarāpopototanga o te Pepa B.

Kei te tū tētahi kuaha i mua i te whakarewatanga i te taumata papanga: kua aukatia te waihanga kiritaki kia whiwhi whakaaetanga mārama a te kaiwhakahaere. Kāore te papa e whakaoho noa ana i ngā kaipā; mā te kuaha e whakarite kia whai ia kaipā whakahaere i tētahi hipanga whakaaetanga kua tuhia ki ngā rangitaki arotake. He kuaha motuhake mō te ture rangatiratanga e whakatinana ana i te here 403 mārō mō ngā kaipā i waihangatia i muri i te 2026-05-01 kāore nei i ngā wāhanga rangatiratanga e hiahiatia ana; kei te whakahaere tēnei kuaha me te ārai aukatinga ā-roto mō ngā kaipā hanganga-papa kua tohua.

12. Arotake

Ka kohikohi tēnei wāhanga i ngā taunakitanga o te whakatinanatanga o te hanganga ki roto i tētahi wāhanga kotahi. E toru ngā pukapuka rangitaki me tētahi rangahau take kua whakaaturia: te pukapuka rangitaki whakamana take-whakamahinga, te pukapuka rangitaki whakawhitiwhiti anga, te whakaahua whakatū me te whakamana, me te rangahau take pumau-hāshi aratau whakakī mai i te 2026-04-22.

12.1 Whakaritenga whakamātautau

Ka rere te tūāpapa i te whakaputanga i runga i ngā pae hanganga e rua: he whakarewatanga rangatiratanga EU i OVH France (community.myfamilyhistory.digital me ngā subdomains kaipāpā e hono ana ki raro i te mysovereignty.digital me te myfamilyhistory.digital) me tētahi whakarewatanga rangatiratanga Aotearoa i runga i Catalyst Cloud (te hanganga village-nz kei te 202.49.243.176 e tuku ana i ngā subdomains kaipāpā mysovereignty.digital). E rua ngā pae e whakahaere ana i te wāhere kotahi i te whakahōutanga kotahi; ka pupuritia te taurite whakaata puta noa i ngā whāinga whakatū e rua me tētahi Forgejo upstream e mana ana i a ia anō. He pātengi raraunga mō ia pae MongoDB me ngā pātai e herea ana ki te kaipāpā, ā, ka whakatinanahia mā tētahi mono Mongoose; kei runga i tētahi GPU rangatiratanga o Aotearoa te tūtohi whakatau wā-whakahaere mō te paparanga reo ā-horopaki (Catalyst A6000 i ngā haora mahi, eGPU kāinga i ngā wā kāore e mahi ana) me te whakawhiti aunoa.

12.2 Rēhita whakamātau take whakamahinga

Ka whakaatu te pukapuka take whakamahinga e mahi ana ia wāhanga kua whakatinanahia i runga i te hoahoa ki tētahi pātengi raraunga ā-rohe ora. Ka kapi te pukapuka i ngā wāhanga hanganga: te whakakotahitanga taketake; te Kaupapahere Inheritance Engine me ōna aratau tātari; penapena whakamana; te haina rārangi taunakitanga tae atu ki te aratau pātai UPDATE me DELETE; te huarahi toka mate o te rārangi whakahaere; te whakaputanga DID; te kapi kawewe tae atu ki te paparanga kitea; ngā whakaritenga ture matua; te mata kotahitanga; te whakawhitinga rekoata rangatira puta noa i ngā tauira ihirangi i hangaia e te kaipāpā me te kapi o ngā tuhinga-iti whakaurua; te hononga whānuitanga rōpū tae atu ki te mata aho kōrero; Ngā huarahi kawewe me te whakaurunga kanonika DSR; te whakatikatika kaupapa here kaimahi; te urutau kaupapa here WebSocket; te whakahou i ngā tohu matenga; te whakakotahitanga o te mekameka taunakitanga; te mata o te kuaha uru; ngā whārangi tirohanga mō ia kaipā. Kei te taurite te reiti PASS o te pukapuka pūtea i te wāhanga whakaahua; ka taea e tētahi kaiarotake o waho me te uru ki te pūtake wachere te hanga anō i te huinga tuhinga (kei te whakarāpopoto a te Āpitianga B i ngā kāwai).

12.3 Rārangi pukapuka whakawhitiwhiti mō te anga

Ka hipoki te pukapuka rangitaki o te uiui anga i te mata hanganga. Ka ingoa ia rēhita i te ratonga i uiuitia, te whakataunga mō ia āhuratanga, me ngā raraunga whakahaere (ingoa mahi, roa, karae hua). Ka hipoki te huinga ratonga-kaha i ngā ratonga matua o Tractatus (BoundaryEnforcer, ContextPressureMonitor, MetacognitiveVerifier, PluralisticDeliberationOrchestrator, CrossReferenceValidator, InstructionPersistenceClassifier) me tētahi rōpū whānui ake o ngā ratonga motuhake mō ngā whakataunga i kohia i te tipu haere o te hanganga (TractatusAuditRecorder, SovereigntyPrimacyEnforcer, PolicyCoherenceValidator, TenantIsolationValidator, AuditTrailVerifier, SchemaGuardian, PolicyDecisionOracle, TenantOwnerAuthority, PluralisticDeliberator, GovernanceOrchestrator). Ka tuhia te pukapuka rēhita i runga i te āhua kotahi ki ngā pātengi raraunga whakaputa ā-rohe, ā, ki ngā pātengi raraunga rangatiratanga o te EU me Aotearoa — toru ngā wāhi tāuru mō ia whakawhitiwhiti whakaaro — kia kore ai e whakararuraru te tūnga arotake i te ngaronga o tētahi tūmau kotahi. He pūrongo arotakenga hauora kua whakaritea e pūrongo ana i te hou o ia uiui mō ia ratonga, e whakataurite ana ki ngā pae kua whakaritea mō te auau mahi tūturu (4 haora puta noa i te pūnaha, 24 haora mō ia ratonga); i whakakapi ēnei pae i ngā taunoa 30-meneti o mua i whakaputa i ngā whakatūpatō hē mō te memeha i ia wā poto i te whakawhanaketanga kaha.

12.4 Ngā ine whakatū

Te tūnga tuku i te wā whakaahua: e pūrongo ana ngā pae whakaputa e rua/api/health 200; e pūrongo ana ngā ratonga o te wāhanga anga e whakahaere ana i ngā pae e rua; ka whakahaerehia ia pō te verify-and-cache

puta noa i ngā tauira ihirangi i hangaia e ngā kaipā; te mata whakamātautau auahi a Catalyst (catalyst-operational) ka angitu i te kapi katoa; ka rere maeneene a ESLint puta noa i ngā kōnae kua whakarerekētia i ia tukunga; ka mau tonu te taurite ā-pūrerehua puta noa *ingā ovh*, *catalyst*, me *forgejo*. Ko te whakataunga FAIL o te whakamātautau auahi i kitea i ngā matapihi tiaki kaha he whanonga e tūmanakotia ana — ka uiui te whakamātautau auahi ki ngā tauranga mutunga whakaputa e tuku ana i te HTML tiaki i te wā o te aukati — ā, ka hoki ki te PASS i te wā ka whakakorehia te matapihi tiaki.

12.5 Te kitea o te pūkaupapa whakamana

Ka whakakiia te pūrua whakamana puta noa i te huinga kaipānga whakahaere i runga i ngā pae whakaputa e rua, ā, ka kapi i ngā momo ihirangi tekau mā tahi e whakamahia ana ināianei. Ka tapahia ngā rekoata kāore he hash takenga (he toenga iti o ngā rekoata tawhito i mua i te whakawhitinga rekoata rangatira) hei 'kāore e taea te whakamana', ehara i te 'whai mana'. Ko te āhuetanga hanganga, ko te mara whakamana i ia whakautu API GET ka whakaatu i te tūnga o te pātaka ki ngā kaiwhakamahi; ka taea e ngā taputapu arotake i muri mai te whakatau i te hauora whakamana o te hanganga mā te uiui ki te mata API, me te kore e hiahiatia te uru ki te pātengi raraunga. Ko te koha nui, ko te tikanga mō te kitea, ehara i te tatau rekoata.

12.6 Tauira take: te pepeke pumau-haehae aratau whakakī o te 2026-04-22

Ko te kaupapa whakamātautau tino whai akoranga i te wā e whakawhanake ana te hanganga, ko te kitenga o tētahi pepeke pumau-hāshi i te wā e whakamana ana i ngā take whakamahinga o te hononga ara-pānui o te pūrua whakamana. I te whakahou haere te kaiwhakariterite āhua paerewa i ngā āhuetanga ka taea te tatau o tētahi tuhinga-iti ORM — he tauira i tika ai mō ngā utanga mea-māmā, engari i whakaatu i te tūnga ā-roto o te ORM mō ngā tuhinga kua whakakīa, ā, nā reira i whakaputa i ngā hash i wehewehe i ngā aratau whakakī. I penapenahia e ngā hash wā-tiaki tētahi uara kotahi; i tatau e ngā hash wā-pānui tētahi atu; ā, ka kitea e ia rēhita i muri i te tuku te `hapa chain_hash_mismatch`. Ko te whakatika he hipanga whakanoho kotahi-raina. I pāhi noa te pepeke i te huinga whakamātautau-wāhanga nā te mea i whakamātautau ngā whakamātautau i ngā urunga mea-māmā — ko te aratau hapa i hiahiatia ai ngā tuhinga tūturu kua whakakīa.

He tauira whai take tēnei mō te tikanga whakahaere: ka whakamana ngā whakamātautau kei te mahi te hononga i roto i ngā tauira whakamātautau, engari mā te whakamana take-whakamahi ki tētahi pātengi raraunga ora e whakamana ana kei te mahi te hononga i te ao tūturu. Ko te tikanga e whakamātauria ana ngā mea e whakaatu ana ngā tauira whakamātautau, ā, mā te whakamana take-whakamahi e whakaatu ngā mea e huna ana aua tauira, kua whakaurua ki te tikanga whakahaere o te kaupapa, ā, koia te take i noho ai tētahi kohinga tuhinga whakamana take-whakamahi i te taha o te kohinga

whakamātautau wāhanga. Whai muri i te whakatikatika, i tārūatia anō ngā rekoata katoa o te whakaputanga ki te kaiwhakariterite āhua paerewa kua whakatikahia; kāore he rekoata i ngaro, kāore he tūnga arotake i whakararu, ā, ko te pepeke nei te tauira paerewa e whakamahia ana i ngā whakangungu mō te tikanga whakahaere.

12.7 Whakamāramatanga

E tautoko ana ngā taunakitanga arotake i tētahi kerēme motuhake: he whai-ā-ture, he kitea, he arotake-ā-ture te hanganga i te mata API puta noa i ngā pae hanganga rangatira maha. Ka taea te whakahoki anō i te mata whakamana (rārangi-pūrongo take-whakamahinga, rārangi-pūrongo whakawhitiwhiti anga, ine whakatū) e tētahi kaitātari katoa me te uru ki te pūtake waehere; e whakaatu ana te rangahau take mō te pumau o te hash ka hopukia e te tikanga whakahaere ngā momo hapa tūturu e mahue ana e ngā whakamātautau whakakē. Ko tā te arotakenga *kāore* e kī ana kua āta tiakina katoa ngā mōrearea katoa i §4 — e tiaki ana te hanganga i ngā āhuetanga tūturu *kua ingoaia* mā ngā whakatauranga *kua ingoaia*; ko ngā mōrearea kei waho o te tauira (ngā whakaeke whakamuna e taea te whakahē; te whakaeke i te mekameka tuku o te anga Tractatus; te whakaeke ā-tinana i ngā taputapu o te paparanga whakatau) kei waho o te kaupapa, ā, ka whaiwhaihia i roto i te tikanga whakahaere hei āwangawanga motuhake.

13. Te tū ā-puna tuwhera

E wehewehea ana e te tū ā-puna tuwhera ngā aho e rua.

Ko te **anga Tractatus** — te pūnaha whakahaere mō te wā whakawhanake — he mea tūmatanui, he puna tuwhera i raro i te raihana Apache 2.0, ā, ka tohaina kicodberg.org/mysovereignty/tractatus-framework [1]. Ka taea e tētahi kaiarotake o waho, me te whai wāhi ki tētahi tāutanga o te karaehe Claude-Code me te whare pukapuka tauira o te anga, te hanga anō i āna pepa mahi, tauira waehere, me ngā ine.

Ko te **pūtake waehere o te tūāpapa** — te taupānga whakahaere — kei roto i tētahi tuku puna tuwhera, arā, ia wāhanga-mō-wāhanga, i raro i te Raihana Tūmatanui o te Uniana o Europi Putanga 1.2 (EURL-1.2) [10]. Ka mau ia kōnae puna i ngā upoko EURL-1.2 mō ia kōnae; ko ngā kōnae o te tūāpapa i paingia tata nei (provenance, verification-cache, group-scope attribution, query-mode delete and update hooks, DSR canonical export, federation services, stakeholder UI components, worker policy helpers) kei a rātou te upoko. Kei te tatari te raihana taumata putunga mō te whakatū i tētahi korporatanga whakahaere i raro i te ture o Aotearoa, me tētahi Poari i pōti ā-demokarata, me tētahi Komiti Tohutohu. Ka whakaae te Poari ki ngā panonitanga hanganga e pā ana ki te tū ā-puna tuwhera o te papanga me ngā oati a ngā hunga whai pānga; ka whakarato te Komiti Tohutohu i ngā tohutohu ahurea me ngā tohutohu a ngā hunga whai pānga (ngā tohutohu ahurea Māori; ngā tohutohu a ngā hapori reo iti; ngā

tohutohu a te hāpori Puna Tuwhera). Kāore anō te Poari kia whakatūria; ko ngā upoko EUPL-1.2 mō ia kōnae te whakarite ā-puna tuwhera e haere tonu ana, ehara i te āhua whakamutunga o te taumata putunga.

I tīpakohia āta te huarahi tuku ā-mōdura i runga i te tuku putunga whānui. Ko te take matua i whakaohoho ai ko tētahi momo mata whakaeke o ngā tauira reo nui, ā, i roto i tēnei, ka whakapuaki te tuku pūtake whānui o tētahi tūāpapa kua hono ā-roto i ngā rauemi kāore i arotakengia tō rātou tauira whakatumatuma i te rohe mōdura — arā, he waehere e aukati ana i ētahi whakaeke anake nā te mea kāore anō kia pānuitia e ngā tauira kua whakangungua ki ngā kohinga kupu whakatumatuma. Mā te tuku āta ia wāhanga ka taea te arotake i te tauira mōrearea o ia wāhanga i mua i te whakaputa, ā, ka aukati i te rerenga o te hononga ā-roto ki ngā mata e whakawhirinaki ana te hunga o waho. Ko ngā wāhanga kua tukuna i ēnei rā — arā, te mono matua rangitaki rangatira, te Miihini Tuku Kaupapa Here, te whare rokiroki kī o te kaupupuri, te anga Tractatus, ngā wāhanga o te putorino DSR — e whakatū ana i te mata hanganga ka taea e ngā kai arotake o waho te whakamahi; ā, ka whai ngā wāhanga e whai ake ana i taua ritenga arotake-ka-tuku.

He tuhi tuatahi o te Raihana Tauira o te Hāpori e wātea ana hei puka raihana ritenga, hei whakakotahi i ngā whakaaetanga noa o te pūmanawa puna tuwhera me ngā tikanga motuhake hei tiaki i te hāpori (kāore he whakamahinga mō te tiro-tiro i ngā hāpori; kāore he whakamahinga e takahi ana i ngā whakaritenga rangatiratanga raraunga o te hāpori; kāore he whakamahinga e karo ana i te tūnga o ngā Mātāpono CARE kua whakapuakina e te kaiwhakamahi). Kei te tatari te tuhi tuatahi mō te arotake ture ā-ture; i te tatari ki ngā hua o taua arotake, kei te noho tonu te raihana ā-kōnae o te papanga hei EUPL-1.2.

13.1 Whakahaere kaiwhakarato

Kāore te papanga e whakamahi i tētahi kapua, SaaS, rānei hanganga e whakawhirinaki ana ki te rangatiratanga o Amerika i tōna ara tono whakaputa. Ko te mana whakahaere rangatiratanga o te EU ko OVH France; ko te mana whakahaere rangatiratanga o Aotearoa ko Catalyst Cloud (ko Catalyst (NZ) Limited te hinonga ā-pakihi); kei runga i tētahi pūtukatuka whakairoiro kāore i te US te huringa-aunua home-eGPU mō te tātaritanga i waho o ngā haora mahi. Kei te wehea te manaaki putunga waehere: ko tētahi tauira Forgejo e manaakitia ana e mātou anō te pūtake tawhiti rangatira o te EU, ā, he whakaata ki ngā putunga kau o OVH me Catalyst. Ka whakamahi te tukatuka utu i a Airwallex (NZ) Limited — ka pāngia ngā ara whatunga kāri o Amerika anake mō ia whakawhitinga, ina ko te kaiwhakaputa kāri o te kaiutu nō Amerika, ā, mō taua whakawhitinga kotahi anake. Ka whakamahi ngā taputapu whakamāori i a DeepL (he hinonga Tiamana, kei raro i te mana whakahaere GDPR o te EU). Ka whakatinanahia tēnei tikanga kaiwhakarato mā tētahi ture ā-roto e rārangi ana i ngā kaiwhakarato e whakaaetia ana, e aukatia ana rānei, ā, me whakapuaki mārama; me whai whakaaetanga kaupapa motuhake ngā hē, ehara i te whakaurunga huna.

Kāore he raraunga ā-tinana e kohia ana e te tūāpapa. Ka mahia te whakamana tuakiri mema mō ngā mahi tino hira i waho o te ara matua (te whakaurunga ā-tinana i roto i te hāpori; te whakaurunga ataata; te whakamana mā ngā ara pepa) rānei mā te kī hainatanga tuakiri-whakarōpū e whakahaere ana te mema, kāore rawa mā te hopu raraunga ā-tinana. Ko te aronga he hanganga, ā, e whakakotahi ana i ngā huarahi e whā: kāore e taea te whakahoki i ngā raraunga ā-tinana, nō reira kāore e taea te whakatika i tētahi rerenga mā te hurihanga; e toru ngā huarahi hanganga e pā ana ki ngā raraunga ā-tinana i raro i te mana whakahaere o Amerika (te hopu tika i te taha o Amerika i ngā rohe me ngā uiuitanga vīsa; te manaaki kapua o Amerika e pā ana ki te here o te CLOUD Act ahakoa te motu o te tangata e pā ana ki ngā raraunga; ngā whakaritenga ā muri ake o te Enhanced Border Security Partnership e whakaaro ana ki te uru tika ki ngā pātengi raraunga o ngā putunga raraunga ā-tinana o ngā whenua hoa); ka mau i ngā raraunga ā-tinana me te DNA Māori he tikanga motuhake o Te Tiriti / WAI 262 / WAI 2522 tiaki motuhake e riro ana hei kawenga i te wā ka kohia ēnei raraunga e te papaanga, ā, ko te tukunga a te Karauna i ēnei raraunga ki tētahi mana whakahaere o tāwāhi e whakamātautau ana i te tiaki o te Taonga i raro i te Tuhinga 2 i ngā huarahi kāore e taea e te papaanga te aukati; ā, ko ngā atanga hōtaka taupānga ā-tinana e tino māmā ana ki te whakamahi, nā ngā kamupene kei te tari matua i Amerika e whakahaere ana, ā, mā te whakamahi i ēnei ka takahi i te ture aukati-kaiwhakarato o te papaanga. Mā te whakahē i te kōhi raraunga ā-tinana, ka wehe te papanga i tēnei mata tūraru katoa — kāore e taea te akiaki i te kaiwhakahaere kia whakapuaki i ngā mea kāore i kohia. Ka taea e ngā mema e hiahia ana ki te whakamahi i te wetewete ā-tinana ā-rohe mō tō rātou ake pātaka tohu te mahi i runga i ā rātou ake taputapu; kāore rawa te raraunga ā-tinana e whakawhiti i te rohe o te papanga, ā, kāore te papanga e whakararuraru i tēnei tauira. Ko te mata uru o te papa anō — tae atu ki te kuaha uru rangatira kua tukuna (§15), te whakahoahoa mā ia kaipāpānga e ārahi ana te kaiwhakahaere — e whakamahi ana i ngā rerenga kupu kupuhīpa (āhua kupu-pōro / rārangi kupu a EFF; he nui te pūngao, ā, ka taea te hurihuri) me te whakamātautau mahi-a-rātou ake hei kite i ngā pōtiti.

13.2 Te rohe IP

Ka wehewehea e te tū ā-whakaputa te *āhua hanganga* (ka taea te whakaputa hei ihirangi pepa; kua whakaputaina hei wāhanga puna tuwhera) i *ngā taipitopito whakahaere* (i puritia mō ngā take pae rohe IP). I puritia: ngā tikanga motuhake mō te whakawhitiwhiti whakaaro anga Tractatus mō ia ratonga (ko te rārangi ko te koha a te anga); te ihirangi kupu mō ia momo hua i tua atu i te whānau tauira taumata-teitei; ngā taipitopito whirihoranga mō ia kaipā; ngā taipitopito motuhake mō ngā mara o te whakapuakitanga kotahitanga i tua atu i te āhua hanganga i roto i te Āpitihianga C. Kua whakaputaina: ngā pūtake hanganga i roto i te pepa; te tauira mōrearea me ngā kīanga ka taea te whakamātautau; ngā āhua anga taumata-teitei; ngā here me ngā aronga hapa (§15); ngā wāhanga pūtake i runga i te mahere tuku wāhanga-ki-wāhanga.

14. Te koha hanganga

He whakautu te hanganga ki tētahi āhukatanga hanganga, ehara i te hua whakataetae. Ko te taura papanga-hapori taunoa — nō Amerika te rangatiratanga, e tango ana i te aro, ka taea te whakarerekē i ngā Tikanga Ratonga i ngā wā katoa — he kōwhiringa hanganga motuhake mō te wāhi e noho ai te rangatiratanga raraunga. Ka taea anake te whakautu ki tētahi kōwhiringa hanganga mā tētahi atu kōwhiringa hanganga, ehara mā ngā whakarerekētanga Tikanga Ratonga, ngā tāpiritanga āhukatanga rānei ki ngā papanga o nāianei.

E whā ngā āhukatanga o te mahi e pā ana ki tēnei.

Kei **te whakahaere** te mahi. Ehara te hanganga i te whakaritenga e tatari ana kia whakatinanahia. Kei te rere, puta noa i ngā whirihoranga maha ā-hapori, i runga i ngā hanganga rangatiratanga o te EU me Aotearoa. Ka taea e tētahi kaiarotake te whakamana i te tūnga whakahaere mā te mata API, me te whakamana i ia whakatau hanganga mā te pukapuka rēhita uiui anga kua mau tonu. Ko te pukapuka rēhita whakamana take whakamahinga e kapi ana i te mata hanganga kua whakatinanahia i te taurite. Ko te koha nui ko te tikanga tuhi — arā, ka whakaputa te hanganga i ngā taonga arotake e kitea ana i waho, kāore e hiahiatia te whakawhirinaki ki ngā kupu a te kaiwhakahaere.

He mea kawē ā-hanganga tēnei mahi. Kāore te hoahoanga e whakapae ana ki ngā hapori Māori, ki te reo Māori, ki Te Tiriti rānei. Ko taua anō mara `metadata.origin.collective_id` e āhei ai tētahi hapori Māori ki te tohu i tētahi rekoata ki tōna rūnanga, ka āhei hoki i tētahi Ka taea e te hapori Wēra te tautuhi i tētahi rekoata ki tōna pārihi, te hapori Sāmi ki tōna siida, te hapori Sorāpia ki tōna kāinga. He mea kawē anō hoki te taura paparanga-reo-ā-āhua: ka whakautu te paparanga reo Wēra, i whakangungua ki ngā rauemi reo Wēra i raro i te mana o te hapori Wēra, ki ngā pātai Wēra me taua tū ā-hanganga kotahi i whakamahia e te paparanga reo Māori ki te whakautu ki ngā pātai Māori. He paparanga tūāpapa te hanganga, ehara i te hua.

Ka taea e tēnei mahi **te honohono ā-pātengi**. Ka tukuna te hanganga honohono ā-pātengi takirua mai i te tīmatanga ki te mutunga, ā, kei roto he rārangi whakamātautau whakakore whānui e kapi ana i te whānuitanga, te aukati tuhi, te arotake, te tikanga tohutoro, te penapena raraunga, ngā āhukatanga taha, te whakaaetanga, me te wehewehe ingoa-ā-āhua Wāhanga-3. Kei te tatari ngā hononga federation ora i waenga i ngā whakaurunga kaipupuri motuhake mō te whakaurunga tuatahi maha-taura; ko te āhukatanga hanganga — arā, ka taea e ngā hapori e rua te whakaae, i runga i ngā tikanga ka tautuhia e rātou, ki tētahi whakawhitinga kōrero motuhake, ā, ki tērā anake — koinei tonu te mea e tohu ana ngā tuinga e toru o Te Tiriti mō te hanganga matihiko, ā, koinei hoki te mea e hiahiatia ana e ngā hapori reo iti i Uropi ina whakawhiti ā rātou mahi ā-hapori i ngā rohe ture.

E **whakaute ana** tēnei mahi i **te kawē**. He tangata raraunga tuatahi te mema. Ka taea e rātou te kawēake i tō rātou kohinga rekoata katoa i roto i tētahi āhua ka taea te whakamana mā te kīhipa, ā, ka whakawhiti ki tētahi atu kaupāpā e whakahaere ana i raro i taua tauira hanganga anō. He taurite te kawēake ki te tika uru o te Tuhinga 15 o te GDPR; he taurite te whakawhitinga ki te oati hanganga ko te wehenga he mahi tuatahi. He tauira hapori e uaua ana te wehe, he māra kati, ahakoa ngā kupu hokohoko e whakamahia ana; he tauira hapori e hanganga ana te wehe, koirā te mea e whakaratohia ana e tēnei mahi kua pūrongoia i konei.

Ko te kerēme matatika o te hanganga, ka taea te hanga i tētahi tūāpapa ā-hapori kia mau ai ngā whakamana rangatiratanga ki te taumata rēhita me te taumata hanganga-kaiwhakamahi, ehara i te mea i raro i te whakaaroaro a te kaiwhakahaere. Kei runga te tauira taunoa i te rangatiratanga i whakawhiwhia, i taea hoki te tango e te kaiwhakahaere; he kōwhiringa hanganga rerekē — ko te rangatiratanga hei āhuatanga o ngā rēhita me te hanganga-kaiwhakamahi — e whakahē ana i taua tikanga i tōna hanganga. Ko te mahi e pūrongo ana i konei he taunakitanga ā-tūturu ka taea te hanga i tētahi huarahi kē pēnei e tētahi tīma iti i Aotearoa, i runga i tētahi tahua iti, ā, ka whakahaerehia hei ratonga mō ngā hapori tūturu, ahakoa e anga tonu ana te taiao whakahaere ki te toro ā-ture ki waho (ko te Enhanced Border Security Partnership te tauira ora i Aotearoa).

15. Ngā here me ngā aratau hapa

He maha ngā tūemi kei roto i te pae kaupapa o ngā kerēme a tēnei pepa, engari kāore i whakatinanahia i te wā o tēnei tuhinga tuarua:

- **Haerenga rōpū waka ora.** Ka tukuna te hanganga hononga ā-rua puta noa me tētahi mata whakamana nui, engari kāore anō kia whakahohea he hononga ora i waenga i ngā whakaurunga kaupupuri motuhake. Ko te whakaurunga hononga rōpū waka, e whakaarohia ana hei whakaaturanga tuatahi maha-tauira, e haere ana i runga i te tere a te kaiwhakahaere.
- **Ngā rōpū paparanga reo ā-rohe Pae-2.** Kua whakatāhia ngā rōpū kua tohua mō ētahi atu momo kāinga i runga i ngā tikanga o te kaupapa mō te whakangungu e hiahiatia ana: kāore he rōpū e whakamanahia kia tīmata tae noa ki te wā ka whakatinanahia te kaiwhakamahi tuatahi o taua momo.
- **Tukunga puna tuwhera taumata putunga katoa.** Kei te whai wāhi ngā upoko EUPL-1.2 mō ia kōnae o te tūāpapa; kei te haere tonu te tukunga ā-mōdura; kei te tatari kia whakaaetia e te Poari te raihana taumata putunga, ā, kei te tatari hoki te Poari kia whakatūria hei hinonga ā-ture i raro i ngā ture o Aotearoa.
- **Panuitanga o te Tauākī Whakaū Tiriti v0.2.** Kei te noho tētahi whakahounga v0.2 i raro i te whakatau a te kaiwhakahaere i

whakawhiwhia ki tētahi māngai i runga i tōna whakaaro pai rawa atu; me whakaae mārama a Dr Taiuru kia whakaputahia.

- **Arotake ture ā-tika mō te Raihana Taura o te Hapori.** Kei reira te tuhi tuatahi; kei te tatari te arotake ture ā-tika; i te tatari ki tōna putanga, ka noho tonu te raihana mō ia kōnae o te papanga ki te EUPL-1.2.
- **Whakakotahitanga tuakiri o te kai-rēniti whiwhi – urunga aunoa.** Ka whakahē i te urunga aunoa te huarahi whakauru whakawhiti DSR o nāianei hei taunoa; he mata haumarutanga te urunga aunoa mā te DID whakawhiti-kai-rēniti, ā, me whai i tōna ake huringa hoahoa.
- **Kuaha uru rangatira (kupuhipa + whakamātautau mahi-a-rangi rangatira hei kite i ngā pūmanawa aunoa + waehera whakaora ā-pepa) — kua tukuna, ka whakarewahia ia kaiwhakarato i runga i te tere a te kaiwhakahaere.** Ko te whakamana taketake o te papanga he kuki httpOnly me te wehewehe horopaki kaupupuri e whakatinanahia ana i te papa pātai pātengi raraunga. Ka tukuna te wāhanga kuaha-uru mai i te tīmatanga ki te mutunga hei taputapu waenga paipa-tono ā-ao (accessGate) me tētahiAccessGateConfig mō ia kaupupuri (hash kupuhipa, hītori hurihanga, tatau waehera whakaora), tekau ngā tauranga mutunga REST (/api/access-gate/{status, pow/{challenge,verify}, passphrase/verify, recovery/use, admin/{enable,disable,rotate,status,recovery-codes/pdf}}), he tokorua wero/whakamana proof-of-work e whakahaere ana i a ia anō (kāore he ratonga tātari-bot a te hunga tuatoru), me ngā waehera whakaora ka taea te tā ki te pepa i whakaputaina hei PDF i runga i te tonu a te kaiwhakahaere (kāore he SMS, kāore he īmēra, kāore he hongere kē e rere ana mā ngā hanganga o Amerika). Ka whakawetoia te wāhanga hei taunoa mō ia kaupā; ko te whakarewatanga mō ia kaupā — te tuhu kupuhipa, te tohatoha waehera whakaora, te whakauru mema ki te kuaha — e ārahitia ana e te kaiwhakahaere, ā, ka haere whakamua ia kaupā i raro i te arotake kua tuhia. Ko te ū ki te hanganga mō te whakamana mā te kuputuhi anake, me te kore whakamahi i ngā whakamana ā-tinana, i tāia ai i roto i ngā here kaihoko o §13.1 me te āhuatanga tūturu I9 o §4, he mea mau tonu, ā, e whakatinanahia ana i ēnei rā e te tūnga o te papaanga e kore e kōhi raraunga whakamana ā-tinana, motuhake i te tūnga whakarewatanga ā-teneti o te kuaha. Ko ngā whakahē hanganga e mārama ana ki te hoahoa o te kuaha — te whakamana ā-tohu tinana, te whakamana ā-papa e rua mā SMS, ngā hononga mīharo īmēra mā ngā kaiwhakarato e mana ana i Amerika, te tuku-OTP e mana ana i Amerika, ngā ratonga kitenga pōtiti e mana ana i Amerika, ngā tohu tinana ā-hātepe — kua tuhia ki te mahere-pūrongo o te kuaha uru me ngā take i whakatau ai ia whakahē, nō reira he mau tonu te mata kōwhiringa, ehara i te hē. Ko te mea e ārahitia tonu ana e te kaiwhakahaere ko te whakatau whakahohe mō ia kaupā, ehara i te noho o te wāhanga.
- **Te tuakiri ā-ture o ngā māngai AI — he pātai tuwhera, e aro ana i roto i te Pepa B.** Ka whakatakoto a Dr Taiuru (2026) [25a], hei uiuitanga tuwhera, mēnā, ā i raro i ngā āhuatanga aha, ka taea te whakawhānui i

te tuakiri ā-ture ki ngā māngai AI i hangaia e te mātauranga Māori, ā, ka tuku whakamua mārika i te whakataunga ki te mahi ngātahi a ngā kaihanga AI, ngā tari kāwanatanga, me ngā hapori Māori. Ko te pepa hoa, Paper B, e pūrongo ana i te tikanga whakangungu rōpū ā-wāhanga reo ā-horopaki hei puna mō ngā mahi hononga ā-rōpū ā muri ake nei; kāore tēnei pepa e whakamua, e whakatau rānei i taua mahi.

Ka aroturukihia motuhake ngā mōrearea kei waho o te tauira §4 i roto i te tikanga whakahaere: ngā whakaeke whakamuna e taea te whakahē ki te whare rokiroki matua; te whakaeke i te mekameka tuku o te anga Tractatus, o ōna whakawhirinaki rānei; te whakaeke ā-tinana i ngā taputapu o te paparanga whakatau; te tawhito o ngā pūtake whakamunatanga kei waho o te rohe o te kapi maia o te pūnaha. Kāore ēnei i arohia i roto i tēnei pepa; he āwangawanga tūturu katoa ēnei i te taumata whakatinana, ā, me whai tātaritanga motuhake mō ia.

E rua ngā here hanganga e noho ana i roto i te pūnaha, ehara i te mea nā te whakatinanatanga. Ka tiakina e te hanganga te rangatiratanga o te hapori ki ngā raraunga; kāore ia anake e tiaki i te rangatiratanga o te hapori ki *te māramatanga*. He hapori e whakamahi ana i te paparanga reo ā-horopaki hei whakawhiti i ngā pātai a ōna mema, kei te whakamahi tonu i tētahi tauira reo; ko te kohinga akoranga o te tauira, te tikanga whakangungu, me ngā whanonga i te wā whakahaere he wāhanga o te mata o te hanganga, ehara i te mea motuhake. Ka tuhi a Pepa B i te tikanga whakangungu aromātai e whakamana ana i te papa reo ā-horopaki kia whakawhirinaki ai te hapori; ā, mā āna kitenga ka herea ngā whakatau ka taea e te kaupānui te whakatau i tēnei pepa anake. Ko tētahi atu here hanganga, ko te ārai a te hanganga ki te hoariri A1 o §4 (kaiwhakahaere tūmau kua whakahaua e te mana whakahaere ture) e whakawhirinaki ana i te mutunga ki te whakahaere a te kainoho i āna ake hanganga, i tana mahi tahi rānei me tētahi kaiwhakarato tūmau nō tētahi mana whakahaere rangatira: kāore e taea e te hanganga te waihanga rangatiratanga ki te kore e tautoko te mana whakahaere ture o te kaiwhakarato tūmau i taua mea, engari ka taea e ia te tiaki i te rangatiratanga mō ngā kainoho kei a rātou ngā kaiwhakarato tūmau nō tētahi mana whakahaere rangatira.

16. Whakakapi

Kua whakatinanahia, ā, kei te rere te hanganga kua whakamārama i konei i runga i ngā hanganga rangatiratanga o te EU me Aotearoa. Kei te whakahaere āna pūtake matua: te wehewehe kaiwhakamahi hei pūtake taketake; ngā metadata rekoata rangatiratanga ōrite puta noa i ngā tauira ihirangi i waihangatia e te kaiwhakamahi; te takenga whakamunatanga me te tere whakarerekē arorau; te tuku ture ki ngā reanga whai ake me te kuaha ture whai hua i te rohe pānui; te haina rārangi-tautohu puta noa i ngā hanga, whakahou, me ngā muku (ara tuhinga me ara pātai); te penapena pūtea whakamana

i puta i te wā pānui; te whare rokiroki kī mō ia kaipā me te mutunga o te muku whakamunatanga; te whakaputa tohu tautuhi kore-pokapū; te rārangi whakahaere me te ara whakatau kua hainatia; te anga kawewe me te paparanga kitea-kore-kaiwhakahaere me te rēhita arotake taurite; te kotahitanga ā-taha e rua me te whakaaturanga kua hainatia; kawē rangatiratanga e ārahi ana ngā mema me te whakaurunga ōrite o te Tuhinga 15 ki te kaipāpā e whiwhi ana; paparanga reo ā-horopaki mō ia momo kaipāpā; atanga kaiwhakahaere mō te whakahaere a ngā kaipupuri paanga me te mata arotake pānui-anake (Wāhanga 1–5) me te mata kōrero ā-whaipānga ārahi o te Wāhanga 6 kua tukuna (rārangi whakatika kua whakaaetia e te kaiwhakahaere, kuaha tuhi-ā-tīmatanga-ā-whakaputa, kāore he whakaputa aunoa), kua whānuitia puta noa i ngā momo hua o te tūāpapa i te Wāhanga 7; te whakakotahitanga kaupapa here mō ngā kaimahi me ngā WebSocket; te pūtaketanga whakakōpaki mekameka taunakitanga; te pūtaketanga whakahou tohu matenga; me te kuaha uru rangatira kua tukuna (kupuhipa tuhinga + rōpū tautuhi-aunoa mō te kitenga pūmanawa-ā-ringa + waehere whakaora pepa; whakarewatanga ia-tenant i runga i te tere a te kaiwhakahaere).

Ka hipoki te pukapuka rēhita o te uiui anga i te mata hanganga (ia uiui i tuhia ōrite ki ngā papa raraunga whakaputa ā-rohe, ā-EU, ā-motuhake hoki o NZ); ko te pukapuka tuhipoka whakamana take whakamahinga e kapi ana i ngā wāhanga hanganga kua whakatinanahia i te taurite; ka tukuna te hanganga hononga ā-rua puta noa me tētahi matatini whakamātautau-kore whānui (he wāhanga anō i tirotirohia e tētahi kaiwhakamana ora maha-teneti), me ngā hononga hononga ora i waenga i ngā teneti motuhake e tatari ana ki te whakahoatanga tuatahi o te waka-tahi maha-teneti; kei te whakahaere ngā rōpū paparanga reo ā-rohe mō ia momo kāinga; kei te tatari ngā rōpū kua tohua mō ētahi atu momo kāinga kia puta te kaipāmu tuatahi o ia momo i mua i te whakamanatanga, i raro i te kaupapa whakangungu whai whakaaro a te kaupapa.

Ko te pepa hoa (Pepa B — Ngā Papanga Reo ā-Tūnga mō ngā Hapori Reo Iti me ngā Hapori Taketake, he whakarāpopototanga o te pepa rangahau hoa, kua whakaputaina) e whakamārama ana i te tauira hanganga mō ngā rōpū papanga reo ā-tūnga: ngā AI mō ia momo hapori i whakangungua ki ngā pūrongo a tērā hapori anō, ngā mātāpono whakahaere e whai ana te kaupapa i te wā e whakangungu ana, e whakahaere ana hoki i a rātou, ngā whakaurunga Taumata-1 e rere ana i ēnei rā, me te hanganga whakatau huarua whakahoki-CPU e pupuri ana i te ara whakahaere kia tino noho ki waho o ngā hanganga e whakahaerehia ana e Amerika. Ko te pepa rangahau whānui — me te aromatawai mō ia rōpū, ngā aukatinga whakarerekē taumaha, te karapa tuhinga whakatairite, me te whakawhānaungatanga hōhonu ki te mahi whakahaere AI Māori whānui a Dr Taiuru — tae atu ki te Kaupapa Māori AI Framework [25b] (ngā mātāpono whakaritenga o Te Tiriti mō te whakaaetanga AI, te rangatiratanga raraunga, me te kawenga-ā-roto katoa) me te uiuitanga hou ake [25a] (te pātai tuwhera mō te tangata ā-ture mō ngā māngai AI i hangaia e te mātauranga Māori, ā, e whakarōa ana e Dr Taiuru kia mahi ngātahi ngā kaihanganga AI, ngā tari

kāwanatanga, me ngā hapori Māori) — ka whakaroa kia tae rā anō ngā raraunga whakangungu-whakahaere kua whakamana ki te ringa. Ko te pepa katoa te wāhi ka whai pānga tika ai ngā rēhita e rua i wehewehea e Dr Taiuru — te haepapa whakahaere whakaritenga me te pātai ā-tangata uiui — ki te kaupapa ako ā-rōpū e pūrongo ana. Ka whakamahi te pepa katoa i te Tikanga Whakamātautau a Mead (tapu, mauri, take-utu-ea, whanaungatanga) hei mata arotake mō ngā mahi hononga ā-rōpū ā-mua; kāore hoki e whakamua i taua mahi hononga, engari ka pūrongo i te tikanga whakangungu rōpū i roto i ngā taipitopito whakamātautau e hiahiatia ana e taua mahi hononga.

Ka tukuna tēnei pepa hei tauira mahi mō te āhua e taea ai e te rangatiratanga hoahoanga te whakautu ki a Te Tiriti, ki te tangata AI (Dr Taiuru 2026), me ngā pēhanga ā-rohe a te EBSP-class ki te tahua a tētahi rōpū iti. Ko te hanganga te koha; ko te whakatinanatanga, arā, te ū a te kaituhi ki te whakahaere i te hanganga i raro i ngā here e tiakina ana e ia, koia tōna taunakitanga. E whakamanahia ana ngā kōrero me ngā whakatikatika ki te kaituhi matua.

Ngā mihi

E mihi ana te kaituhi ki a Leslie Stroh mō tana arataki whakaaro hōhonu taketake i runga i te whakaaro maha me te pātai mō te pai i roto i te mātauranga atamai hangarua. Ko te ū ki te whiriwhiringa maha e rere ana i roto i te hanganga whakahaere o te tūāpapa — me te whakapono whānui ake, arā, me whakautu e tētahi turanga AI e tika ana kia hanga, ki tētahi ariā nui o te pai, ehara i te mea tikanga noa iho — nā aua kōrero i hanga ai tōna āhua taketake.

Ka whakawhetai hoki te kaituhi ki a Dr Karaitiana Taiuru mō tana arotake haumarū-ā-ahurea o te Tiriti Compliance Statement v0.1; kei te tatari kia whakaaetia e ia anake te whakahua ingoa mō ngā whakahōutanga i muri mai, ā, kāore i whakapuaki i konei. Nā ngā kaiarotake o ngā tuhinga tuatahi o te pūrongo whakatinana o mua (v0.4) i whakarato i ngā anga kua mau tonu ki tēnei pepa; e mihi nui ana mātou mō ā rātou koha.

Tāpiritanga A — Te Whakahāngai Anō

Ka taea e tētahi kaiarotake e hiahia ana ki te tiroiro i te mata whakahāngai o te hanganga te mahi pera i ngā taumata e whai ake nei.

Ko te anga Tractatus te wāhanga tino tūmatanui, kua tohaina kicodberg.org/mysovereignty/tractatus-framework i raro i te railhana Apache 2.0. E tuhi ana tana pepa mahi i ngā kitenga tirohanga o te anga me ngā tauira hanganga e whakamana ana ia. Ka taea e tētahi kaiarotake kua whai uru ki tētahi tāutanga ā-kāwai Claude-Code te whakahoki i te whare

pukapuka taurira o te anga, me te tārīte i te hopu rekoata uiui ki tētahi pātengi raraunga ā-rohe.

Ko ngā wāhanga kua tukuna o te tūāpapa — i raro i te EUPL-1.2 i te tukunga wāhanga-ki-wāhanga — e whakatū ana i te mata hanganga ka taea e ngā kaiarotake o waho te whakamahi. Ko ngā wāhanga tae noa ki tēnei rā e kapi ana i te mono matua rēhita rangatiratanga, te Miihini Tuku Kaupapa Here, te putunga kī kaipā, ngā wāhanga o te putorino DSR, me te hanganga hangarau tuhi kōrero uiui anga.

Ka whakamāramahiangā **wāhanga hanganga** i tēnei pepa i te taumata o ā rātou hononga me ā rātou kirimana. Kāore i whakarārangihia ngā ara pūtake motuhake (ngā ingoa kōnae i roto i te rākau pūtake o te tūāpapa) i runga i te whakaaro; ka tiakina te āhei ki te whakahoki i ngā kōnae me ngā rārangi mā ngā wāhanga kua tukuna, ā, kei waiho ngā taipitopito whakahaere (papa tuku, kuaha tiaki, whakakoi hononga) hei taipitopito hangarau, ehara i te koha rangahau.

Ka whai i te tikanga ingoavalidate-use-cases-***ngā tuhinga whakamātautau whakamahinga**; ka whai i te tikanga ingoarecord-***-consultation** ngā tuhinga tuhi mō te uiui anga. Ka whakaputa ia tuhinga uiui i tētahi tāpiritanga idempotent o ngā rekoata ki ngā papa raraunga whakaputa ā-rohe, ā, ki ngā papa raraunga rangatiratanga o te EU me Aotearoa, mā ia tohu arotake.

Kua tuhia ki [1] **te whakahāngai anō i te tauira uiuitanga anga**, mai i te taha o te anga Tractatus.

Tāpiritanga B — Whakaahua o te Rārangi Tautuhi Take Whakamahinga

He whakaahua o nāianeī o te pukapuka taurira whakamahinga e kapi ana i ngā tuhinga whakamana motuhake neke atu i te 45. Ia tuhinga e whakapuaki ana i tētahi āhuatanga ingoa o tētahi wāhanga hanganga ki tētahi pātengi raraunga ā-rohe e ora ana; ka taea ngā tuhinga te whakahaere motuhake, ā, ka taea hoki te whakahaere ngātahi. Ko ngā kāwai kei raro nei e whakarāpopoto ana i te huinga tuhi; kei roto i ngā taonga ā-roto o te kaupapa ngā tatauranga o ia āhuatanga mō ia tuhi me ngā hua PASS/FAIL, ā, ka taea te whakaputa anō e tētahi kaiarotake o waho me te uru ki te pūtake waehere:

- Te whakakanohi taketake me te pumau puta noa i ngā aratau whakakīwai
- Pūnaha Tuku Kaupapa Here: whakatau matua; whakaurunga kuaha-tātari; tātari takenga anake; tātari ā-rohe rōpū; aratau mārō mō te rohe kāore i te mōhiotia
- Roopu katinga whakamana: ratonga whakauru; pūāhua muri-tiaki + horoi kua whakaritea; whakaurunga ara-pānui; pūāhua muri-tiaki ara-whakahou
- Pātaka kī kaipā: whakahaere oranga

- Haina-ropu taunakitanga: WAIHANGA KAIHOKO; WHAKANŌPŌ/MŌKŌTEKE aratau tuhinga; MŌKŌTEKE aratau pātai; WHAKANŌPŌ aratau pātai; rārangi-whakahaere tūpuna
- Whakaputanga DID: tuhinga kaipā + mema
- Whakaritenga rarangi whakahaere
- Uhi kaweake: whanonga ā-aratau; whakaurunga; rangahau huarahi angitu; rēhita rangitaki; paparanga kite mō ngā aratau hash me aggregate
- Ngā whakaritenga ture matua me te tautoko reo maha
- Whakawhitinga rēkōta rangatira: puta noa i ngā tauira taumata-runga i hangaia e te kai-rēti; kapi tuhinga-iti whakauru (NewsPost, Resource, EventMenu, Edition); Ngā Wāhanga 1+2 o ngā tuhinga-iti
- Whakaritenga-whānui mō ngā rōpū me te tohu whakawhiti-āhua
- Kaweake paerewa DSR: whakahiato kohinga; haina whakapuaki; pono o te tūtohu whakaiti; whakaurunga mutunga-ki-te-mutunga mō te kaiwhiwhi-teneti
- Kuaha kaupapa here kaimahi: whakamātautau āputa āwhina; whakaurunga mō ia kaimahi (EmailProcessor, DocumentScanner)
- Kaihuri kaupapa here WebSocket
- Whakahou Tombstone
- Whakakōpaki mekameka taunakitanga
- Whārangi hononga: mātara whakamātautau-kore puta noa i ngā kāwai tekau mā rua, me tētahi wāhanga i hikoia e tētahi kaiwhakamana maha-kaiwhakamahi ora

Tāpiritanga C — Tautuhinga whakarārangi mō te whakaaturanga kotahitanga

Ka kawea e tētahi rēkōta whakaaetanga federation te whakaaturanga ā-taha e rua i te taumata wāhanga hanganga. Ngā ingoa o te hōtaka: te tuakiri o te whakaaetanga; ia rōpū (tuakiri o te kaipā, tuakiri-whakawātea o te kaipā, hainatanga, tohu-wa o te hainatanga); te kaupapa here herea (he rārangi: whakakotahitanga haerenga motokā; pānuitanga kaupapa hui; whakawhitiwhiti whakaaro ngātahi; tiakitanga ngātahi kaupapa; tohutoro ingoa whakawhānui; me ētahi atu); te āhua rerenga raraunga mō ia ahunga (ngā mara kua whakapuaki; ngā whakarerekētanga kua whakamahia; te pupuri i te pito whiwhi); te ture whakatau kaupapa here (ko tēhea ture matua e whakahaere ana; me pēhea te whakatau i ngā taupatupatu kaupapa here, tae atu ki tētahi ripanga mārāma mō ia mara); te tukanga whakakore (e kotahi o ngā rōpū e whakahaere takitahi ana; te horapa tonu; ka pupuri ngā rōpū e rua i tētahi kape kua hainatia mō te arotake); me ngā tuakiri pupuri arotake (ngā rekoata rangitaki-uuui whakawhānui i ia taha). Ka mau tonu te metadata paerewa mō te rēhita rangatira ki te tuhinga anake (te takenga, te kaupapa here, te whakamunatanga, te mekameka taunakitanga, te pūrua whakamana); kāore he kotahitanga e whakahohe mēnā kāore he haina kua whakamana mai i ngā rōpū e rua ki ō rātou ake tuhinga DID.

Kei te whakaroa ngā taipitopito motuhake mō ngā huinga mara whakatinanatanga i tua atu i tēnei āhua hanganga, i runga i te tūnga ārai IP (§13.2). Mēnā e hiahia ana ngā kaiarotake ki ngā taipitopito katoa o te hoahoa raraunga mō te aromatawai hototahitanga, ka taea e rātou te tiki mā te pātai tika ki te kaituhi hāngai i raro i ngā here muna e tika ana.

Ngā Tautuhinga

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Tūnga tuhi: Tuhi arotake v4 — Mei 2026. E pōwhiritia ana ngā kōrero me ngā whakatikatika. I hāngai te reo ki te pūrongo whakatinana o mua, v0.4. Kua tāpirihia te hanganga mō Ngā Mahi Honohono, te Tauira Mōrearea, me te Arotakenga i ia Hipanga C o te mahere whakarite anō 2026-05-01. Puka hoa (Puka B — Ngā Papanga Reo ā-Tūnga, he whakarāpopototanga o te puka hoa rangahau, kua whakaputaina). I whakaputaina ki [agenticgovernance.digital](#) hei tuhi arotake; ka tohua te Zenodo DOI i te wāhanga kaitono tuku v4.