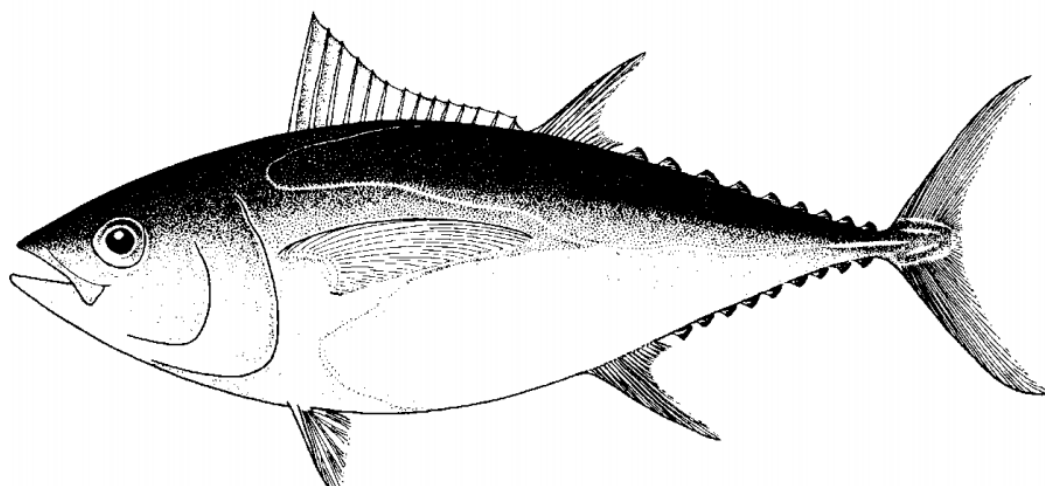ELEVENTH MEETING OF THE TUNA FISHERY DATA COLLECTION COMMITTEE

20-24 AUGUST 2018, BRISBANE AUSTRALIA

WORKING PAPER DCC11-WP06 – agenda item 11

MCS DATA STANDARDS

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Background

What is the current situation, issue or problem?

An opportunity exists to enhance MCS efficiency and effectiveness by designing digital first systems. However differences and uncertainties in members systems creates barriers to the implementation and integration that would result in the desired efficiency and effectiveness gains. Without standards, the need to meet regional MCS requirements would require the design and development of different systems solving the same problems, over and over again. This increases the scope, complexity, fragility, risks and costs associated with creating and maintaining systems.

Relevance

What do we want to do at DCC?

As DCC supports the improvement of data standards, data processes and data quality that underpins compliance and the provision of technical advice by the Pacific Islands Forum Fisheries Agency (FFA) to its respective members, we would like to seek input from DCC participants for the following:

1. Our internal standards design & development process - Draft Standards Development Process
2. The data standards that would act as building blocks for MCS systems - Draft MCS Data Standards

Information

What key pieces of information do I need to share to give my audience a clearer understanding?

The MCS standards are designed to help simplify the issues with designing regional MCS systems by providing a set of standardised building blocks. These can be reused like "lego blocks" to address the issues highlighted above. The scope of this standard is limited to focus on the data standards required for registration of entities and the authorisation of these entities. Entities **are things** like vessels, people, organisations etc. Authorisations **are control mechanisms** like certificates, licenses, permits etc.

Ending

What does success look like?

A set of standards that allow

- Different systems to easily talk to each other without much design and development effort
- Systems designers and developers a set of building blocks they can use to design and develop MCS systems without reinventing the wheel
- more efficient and effective MCS systems

Follow Up Questions

What questions should we ask to stimulate discussions? List down 3 things you'd remove and why? List down 3 things you'd add and why? List down 3 things you'd change and why?

REGIONAL MCS STANDARDS

NOTES ABOUT READING THE STANDARDS:

- **RFT**: here means required for transmission i.e. sending data from one system to another. All other fields are optional for sending. Fields can be blank.
- **Level 1**: For use in operational MCS systems (OLTP)
- **Level 2**: For use in analytical MCS systems (OLAP)
- **Level 3**: For use in data feed systems (APIs / Data Stream)
- **Purpose**: describes the WHY of the standard
- **Function**: describes the HOW of the standard
- **Data Standards**: describes the WHAT of the standard
- **Glossary**: At the bottom of the standard is a glossary of terms
- **Constraints:** Due to time constraints and staff travel schedules not every data field proposed under this draft standard has been thoroughly validated via working prototypes

CORE PURPOSE & FUNCTION

Core Purpose: To facilitate the verification of information.

Core Function: These MCS Data Standards serve as a guide to the minimum data fields required for the capture, storage and transmission of information; to and from different fisheries systems that enable the control functions in MCS.

LEVEL 3: VESSELS

Purpose: Provides information that may be used to verify vessel identity.

Function: Capture, store and transmit vessel identity information between different systems.

Field	Example	Description	Data Type	RFT
reg_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 that is issued to every Vessel	String	Yes

REGIONAL MCS STANDARDS

verification_level	LEVEL 1	What level of verification has been applied: **Options:** LEVEL 1, LEVEL 2, LEVEL 3 LEVEL 1 - Online verification LEVEL 2 - LEVEL 1 + Background Checks LEVEL 3 - LEVEL 2 + Physical inspection	String	Yes
status	APPROVED	The status of the registry. **Options:** PENDING,APPROVED,REJECTED,REVOKED, SUSPENDED	String	Yes
vessel_name	Nikko Maru	The Name of the Vessel	String	Yes
category	FISHING	Category of the Vessel. **Options:** FISHING,CARRIER,BUNKER,SUPPORT,RESE ARCH,OTHER	String	
vessel_type	LL	The type of vessel as defined by the 2-3 character vessel abbreviation code as found in the FAO Simplified Classification of Fishing Vessels By Vessel Types, ANNEX L.III	String	Yes
ircs	QWERTY	The International Radio Call Sign for the Vessel	String	Yes
uvi	1234567	The International Universal Vessel Identifier	Integer	Yes
ffa_vid	1234	The Forum Fisheries Agency Vessel Identifier	Integer	Yes
wcpfc_vid	4321	The Western Central Pacific Fisheries Commission Vessel Identifier	Integer	Yes
flag_state_number	ABCD1234	The registry number of the vessel	String	Yes
flag_state	JP	The country that the vessel is flagged in	String	Yes
reg_port	Omaezaki	The port the vessel was registered at	String	
flag_state_reg_expiry	2019-03-12	The date the flag state registry certificate will expire	Date	Yes
goodstanding_expiry	2019-03-18	The date good standing expires. Format YYYY-MM-DD	Date	Yes

url	https://vessel.ffa.int/public.php?id=12345	A link to the original record from the source system. Source system means the system where the data was either initially captured from or sent from	String	Yes
applicant_email_address	john.doe@ggmail.com	Email address of the applicant who submitted the original record. Format as defined in [rfc6532](rfc6532)	String	Yes
hash	c54df3b901f4bb4878d82c9ec18c467396cb8d184bae4c9dfc642a2d0520e6fb	A digital fingerprint of the record. Created by applying a hashing function to the original record.	String	
signature	eyJoeXAiOiJKV1QiLCJhbGciOiJIUzUxMiJ9.eyJpc3MiOiJPbmxpbmUgSldUIEJ1aWxkZXIiLCJpYXQiOjE1MzIzMTYxNDUsImV4cCI6MTU2Mzg1MjE0Nyw
iYXVkIjoid3d3LmV4YW1wbGUuY29tIiwic3ViIjoianJvY2tldEBleGFtcGxlLmNvbSIsIkdpdmVuTmFtZSI6IkpvaG5ueSIsIlN1cm5hbWUiOiJSb2NrZXQiLCJFbWFpbCI6Impyb2NrZXRAZXhhbXBsZS5jb20iLCJSb2xlIjpbIk1hbmFnZXIiLCJQcm9qZWN0IEFkbWluaXN0cmF0b3IiXX0.WaK-veGpHA2yDROqI8kq9faXjeujw7Wgd9u4zMh6YiE4IsrnlXar-vdMXVVVgxXHGmTizupKa9M9BkyqgBVZ8Q	A digital signature of the record created by a system. This is created by encrypting the hash of the record with the issuing systems private key to produce the signature. This signature is used by other systems to verify the authenticity of the original data.	Text	

LEVEL 3: VESSEL PERMIT

Purpose: Provides information that can be used to verify a vessel has the correct rights.

Function: Capture, store, transmit and verify information regarding a vessels rights.

REGIONAL MCS STANDARDS

Field	Example	Description	Data Type	RFT
auth_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 that is issued to every Authorisation	String	Yes
reg_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 issued to be issued to every Entity	String	
national_permit_number	FM18-JP33342LP-12290	The permit / license number used at the member country level	String	Yes
vessel_name	Nikko Maru	The Name of the Vessel as appears on it's good standing certificate	String	Yes
auth_gear_type	LL	The authorised gear type of vessel	String	
ircs	QWERTY	The International Radio Call Sign for the Vessel	String	Yes
uvi	1234567	The Universal Vessel Identifier	Integer	Yes
ffa_vid	1234	The Forum Fisheries Agency Vessel Identifier	Integer	Yes
wcpfc_vid	4321	The Western Central Pacific Fisheries Commission Vessel Identifier	Integer	Yes
flag_state_registry_number	ABCD1234	The registry number of the vessel	String	Yes
mtu_serial_number	QW-1231-3123	The unique serial number stamped into every MTU unit hardware unit.	String	
mmsi	123456789	Maritime Mobile Service Identities (MMSIs) are nine digit numbers used by AIS	Integer	
flag_state	JP	The country that the vessel is flagged in. A 2 character code as defined in ISO 3066-alpha-2.	String	
status	PENDING	The Status of the permit. ***Options:*** PENDING,APPROVED,REJECTED,REVOKED,SUSPENDED	String	

REGIONAL MCS STANDARDS

jurisdiction	CK	Jurisdiction that these rules apply to. A 2 character code as defined in ISO 3066-alpha-2	String	
auth_type	ACCESS RIGHT	The type of right being issued: **Options:** *OWNERSHIP RIGHTS, ACCESS RIGHTS, PERMISSION RIGHTS*	String	
auth_area	CK EEZ	The area of operation allowed derived from authorised fisheries area, a 2 character code defined in SPC Fisheries Areas + EEZ to indicate in zone fishing and HS to indicate outside High Seas pockets	String	Yes
auth_to	CATCH FISH	The rights issued to the vessel **Options:** CATCH FISH,TRANSHIP AT SEA,TRANSHIP IN PORT, LAND CATCH, BUNKER VESSEL,SUPPORT VESSEL,CONDUCT RESEARCH,FLAG STATE,OWN QUOTA,OTHER	String	Yes
auth_by	Ben Ponia	The Authority that is mandated to issue this authorisation	String	Yes
issued_by	Ministry of Marine Resources	The authorising organisation	String	Yes
issued_by_email	ben.ponia@mmr.gov.ck	Email address of the issuing officer. As defined in rfc6532	String	Yes
issued_to	NIKKO SUISAN CO. LTD	The name of the entity the authorisation has been issued to		Yes
issued_to_email	nikko.suisan@gmail.com	The email address of the company or person the permit is being issued to. As defined in rfc6532	String	Yes
applicant_email	john.doe@gmail.com	The email address of the applicant or agent who is applying for the permit. As defined in rfc6532	String	Yes
condition_id	644e1dd7-2a7f-18fb-b8ed-ed78c3f92c2b	The unique identifier for the condition	String	

REGIONAL MCS STANDARDS

condition_name	Foreign: Class F	The name of the condition that applies to this permit	String	
date_issued	2018-03-10	Date the authorisation was Issued. Format YYYY-MM-DD	Date	Yes
date_start	2018-03-12	Date the authorisation becomes valid. Format YYYY-MM-DD	Date	Yes
date_end	2019-03-12	Date the authorisation becomes invalid. Format YYYY-MM-DD	Date	Yes
attachments	FFA-Good-Standing-Certificate-Nikko-Maru.pdf	Any supporting documents	String	
message	An permit to fish has been issued to NIKKO SUISAN CO. LTD on the 10th of March, 2018 by the Cook Islands Ministry of Marine Resources. This permit is valid from the 12th of March, 2018 to the 12th of March, 2019	A message of the vessel permit transaction	Text	
url	https://permit.ffa.int/public.php?id=12345	A link to the original record from the source system	String	Yes
ip_address	202.65.23.101	The internet protocol address that the record was submitted from	String	
date_created	2018-03-10	The date the record was created. Format YYYY-MM-DD	Date	
date_updated	2018-03-12	The date the record the record was updated. Format YYYY-MM-DD	Date	
hash	c54df3b901f4bb4878d82c9ec18c467396cb8d184bae4c9dfc642a2d0520e6fb	A digital fingerprint of the record. Created by applying a hashing function to the data.	String	
access_token	eyJoeXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJ1c2VySWQiOiJiMDhmODZhZi0zNWRhLTQ4ZjItOGZhYi1jZWYzOTA0NjYwYm	A digital access token that can be used to verify authorisation is valid. As defined in rfc7519	String	

REGIONAL MCS STANDARDS

	QifQ.-xN_h82PHVTCMA9vdoH rcZxH-x5mb11y1537t3rGzcM			

LEVEL 3: CONTROL CONDITIONS

Purpose: Provides information about control conditions

Function: Capture, store and transmit control conditions between systems

Data	Example	Description	Data Type	RFT
condition_id	644e1dd7-2a7f-18fb-b8ed-ed78c3 f92c2b	A Universally unique identifier (UUID) issued by the system to a condition	String	Yes
country	CK	Country / Jurisdiction that the condition applies to. Represented as a 2 character country code as defined in the ISO 3166-1-Alpha-2	String	Yes
condition_type	FOREIGN FISHING VESSEL	Type of Condition	String	Yes
condition_name	Foreign: Class F	Name of the Condition	String	Yes
condition_purpose	Regulates and controls foreign fishing vessels in EEZ	A brief description of what the purpose of the condition is	Text	
regulation	Pursuant to Part III Section 8 of the Fisheries Act 1988 and Fishing Access Agreement	The legislation the condition refers to	String	Yes

url	https://conditions.ffa.int/?id=644e1dd7-2a7f-18fb-b8ed-ed78c3f92c2b		String	Yes
condition	TERMS AND CONDITIONS: FOREIGN FISHING VESSEL LICENSE 1) Compliance with National Laws The operator shall comply with the national laws of Samoa. The operator shall be responsible for the compliance by the vessel and its crew with these national laws, and the vessel shall be operated in accordance with these laws. 2) License A foreign fishing vessel applying for a licence to fish in Samoa's waters shall provide the minimum information contained in Annex 1.…	The terms of the condition	Text	
date_updated	2019-01-12	The date the condition was last updated. Format YYYY-MM-DD	Date	
date_created	2019-01-13	The date the condition was created. Format YYYY-MM-DD	Date	

Level 3: Agreements

Purpose: Provides information about agreements made between entities

Function: Capture, store and transmit agreements between systems

REGIONAL MCS STANDARDS

Data	Example	Description	Data Type	RFT
agreement_id	644e1dd7-2a7f-18fb-b8ed-ed78c3 f92c2b	A Universally unique identifier (UUID) issued by the system to an entity upon registration	String	Yes
parnership_typ e	BI-LATERAL	The type of agreement. **Options**: UNI-LATERAL, BI-LATERAL, MULTI-LATERAL		
country	CK	Country that the organisation is registered or incorporated in. Represented as a 2 character country code as defined in the ISO 3166-1-Alpha-2	String	Yes
org	Ministry of Marine Resources	Typically the fisheries agency entering into the agreement	String	Yes
agreement_par tners	Luen Thai	Typically a company or an association that is entering into the agreement	String	Yes
agreement_cod e	CN:LT-2018	A national code given to agreements (optional)	String	
agreement_ter ms	TERMS AND CONDITIONS: FOREIGN FISHING VESSEL LICENSE 1) Compliance with National Laws The operator shall comply with the national laws of Samoa. The operator shall be responsible for the compliance by the vessel and its crew with these national laws, and the vessel shall be operated in accordance with these laws. 2) License A foreign fishing vessel applying for a licence to fish in Samoa's waters shall provide the minimum	The terms and conditions of the agreement	Text	

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	information contained in Annex 1....			
agreement_upload	https://agreement.ffa.int/agreement/mmr-luen-thai.pdf	A copy of the signed agreement	String	
agreement_fees	5136800.00	The agreement fees	Number	
agreement_currency	USD	The currency of the fees	String	
agreement_email	ben.ponia@mmr.gov.ck	The email address of a representative from the member country side who manages this agreement	String	Yes
agreement_manager	Ben Ponia	The name of the representative that manages this agreement	String	Yes
agreement_signatory	Ben Ponia	The name of the representative from the member country who signed the agreement	String	
agreement_partner_signatory	Mr Jackie Chan	The name of the representative that signed the agreement	String	
agreement_partner_manager	Mr Jack Mao	The name of the representative that manages this agreement	String	Yes
agreement_partner_email	agreements@luen.thai.com	The email address of the representative from the partner side that manages this agreement	String	Yes
url	https://agreement.ffa.int/?id=123421	A link to a complete record of the agreement	String	Yes
date_signed	2019-01-12	date the agreement is signed. Format YYYY-MM-DD	Date	Yes
date_start	2019-01-12	date the agreement comes into effect. Format YYYY-MM-DD	Date	Yes
date_end	2019-01-12	date the agreement ends. Format YYYY-MM-DD	Date	Yes
date_updated	2019-01-12	The date the condition was last updated. Format YYYY-MM-DD	Date	
date_created	2019-01-13	The date the condition was created. Format YYYY-MM-DD	Date	

REGIONAL MCS STANDARDS

LEVEL 3: PORT ENTRY / EXIT PERMITS

Purpose: Controls entry into and out of ports

Function: Electronically capture, store, transmit and verify the permissions for a vessel to enter a port across different systems.

Field	Example	Description	Data Type	RFT
auth_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier for the Authorisations	String	Yes
reg_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier issued to every entity	String	Yes
national_permit_number	FM18-JP33342LP-12290	The permit number used at the member country level	String	Yes
vessel_name	Nikko Maru	The Name of the Vessel	String	Yes
ircs	QWERTY	The International Radio Call Sign for the Vessel	String	Yes
uvi	1234567	The Universal Vessel Identifier	Integer	Yes
ffa_vid	1234	The Forum Fisheries Agency Vessel Identifier	Integer	Yes
wcpfc_vid	4321	The Western Central Pacific Fisheries Commission Vessel Identifier	Integer	Yes
flag_state_auth_idnumber	ABCD1234	The registry number of the vessel	String	Yes
flag_state	JP	The country that the vessel is flagged in. A 2 character country as defined in ISO 3066-alpha-2	String	Yes
status	APPROVED	The Status of the permit: **Options:** PENDING,APPROVED,REJECTED	String	Yes

REGIONAL MCS STANDARDS

jurisdiction	CK	Jurisdiction that these rules apply to. A 2 character country as defined in ISO 3066-alpha-2	String	Yes
auth_by	Ministry of Marine Resources	The Authority that is mandated to issue this authorisation	String	Yes
issued_by	Ben Ponia	The Authorising Officer who has approved this authorisation	String	Yes
issued_by_email	ben.ponia@mmr.gov.ck	Email address of the issuing officer	String	Yes
issued_to	NIKKO SUISAN CO. LTD	The name of the entity the authorisation has been issued to	String	Yes
issued_to_email	nikko.suisan@gmail.com	The email address of the company or person the permit is being issued to	String	
applicant_email	john.doe@gmail.com	The email address of the applicant or agent who is applying for the permit	String	Yes
date_issued	2018/03/10	Date the authorisation was Issued. Format YYYY-MM-DD	Date	Yes
date_start	2018/03/12	Date the authorisation becomes valid. Format YYYY-MM-DD	Date	Yes
date_end	2019/03/12	Date the authorisation becomes invalid. Format YYYY-MM-DD	Date	Yes
attachments	https://licensing.tklapp.com/uploads/FFA-Goodstanding-Certificate-Nikko-Maru.pdf	Any supporting documents	String	
message	An permit to fish has been issued to NIKKO SUISAN CO. LTD on the 10th of March, 2018 by the Cook Islands Ministry of Marine Resources. This permit is valid from the 12th of March, 2018 to the 12th of March, 2019	A message of the vessel permit transaction	Text	
url	https://permit.ffa.int/public.php?id=12345	A link to the original record from the source system	String	Yes

REGIONAL MCS STANDARDS

applicant_email_address	john.doe@ggmail.com	Email address of the applicant who submitted the application		Yes
ip_address	202.65.23.101	The internet protocol address that the record was submitted from	String	
date_created	2018-03-10	The date the record was created. Format YYYY-MM-DD	Date	
date_updated	2018-03-12	The date the record the record was updated. Format YYYY-MM-DD	Date	
hash	c54df3b901f4bb4878d82c9ec18c467396cb8d184bae4c9dfc642a2d0520e6fb	A digital fingerprint of the record. Created by applying a hashing function to the data.	String	
signature	eyJoeXAiOiJKV1QiLCJhbGciOiJIUzUxMiJ9.eyJpc3MiOiJPbmxpbmUgSldUIEJ1aWxkZXIiLCJpYXQiOjE1MzIzMTYxNDUsImV4cCI6MTU2Mzg1MjE0NywiYXVkIjoid3d3LmV4YW1wbGUuY29tIiwic3ViIjoianJvY2tldEBleGFtcGxlLmNvbSIsIkdpdmVuTmFtZSI6IkpvaG5ueSIsIlN1cm5hbWUiOiJSb2NrZXQiLCJFbWFpbCI6Impyb2NrZXRAZXhhbXBsZS5jb20iLCJSb2xlIjpbIk1hbmFnZXIiLCJQcm9qZWN0IEFkbWluaXN0cmF0b3IiXX0.WaK-veGpHA2yDROqI8kq9faXjeujw7Wgd9u4zMh6YiE4IsrnlXar-vdMXVVVgxXHGmTizupKa9M9BkyqgBVZ8Q	A digital signature of the record created by the registry system. This is created by encrypting the hash of the record with the registry's private key to produce the signature. This signature is used by other systems to verify the authenticity of the data.	String	

REGIONAL MCS STANDARDS

LEVEL 3: PERSON

Purpose: Provides proof that a person is who they claim to be.

Function: Store and transmit data about a person's verified identity across systems

Field	Example	Description	Data Type	RFT
reg_id	644e1dd7-2a7f-18fb-b8ed-ed78c3f92c2b	A Universally unique identifier (UUID) issued by the system to an entity upon registration	String	Yes
photo	https://licensing.tklapp.com/uploads/john-doe-passport.jpg	A photo (format: prefer images so they can be displayed with data)	String	Yes
name	John Doe	Name of the individual as appears on the passport	String	Yes
gender	M	Gender of the individual as appears on the passport	String	Yes
date_of_birth	1965/12/12	Date of Birth of the individual as appears on the passport	Date	Yes
place_of_birth	CK	The person's place of birth as appears on their birth certificate. A 2 character code as defined by ISO 3166-1 alpha-2 code	String	Yes
citizen_of	NZ	The persons nationality as appears on their primary identity document e.g. passport. A 2 character code as defined by ISO 3166-1 alpha-2 code.	String	Yes
occupation	CAPTAIN	The individual's current job title **Options:** Captain, Fishing Master, Crew, Fisheries Agent, Fisheries Observer, Fisheries Official, Law Enforcement Etc.	String	Yes
proof_of_identity	https://licensing.tklapp.com/uploads/john-doe-passport.jpg, https://licensing.tklapp.com/uploads/john-doe-seafarer-id.jpg,	A scanned copy of 2 forms of photographic identity as well as a selfie of the person holding their ID's. Other optional documents may include proof of address in the form of 2 utility bills issued to names that match your ID's.	String	Yes

	https://licensing.tklapp.com/uploads/john-doe-selfie.jpg	(format: prefer images so they can be displayed with data)		
status	APPROVED	The status of the registry: **Options:** PENDING,APPROVED,REJECTED	String	Yes
verification_level	LEVEL 1	The level of verification: **Options:** LEVEL 1, LEVEL 2, LEVEL 3. LEVEL 0 = Not verified yet. LEVEL 1 = Online verification. LEVEL 2: Level 1 plus background checks on international and regional blacklists. LEVEL 3 = Level 2 plus in person verification by an authorised officer.	String	Yes
date_of_expiration	2019-01-12	The most recent expiry date from the two ID's	Date	Yes

LEVEL 3: ORGANISATIONS

Purpose: Provides proof that an organisation is what it claims to be

Function: Capture, store and transmit information about an organtionsations identity across systems

Field	Example	Description	Data Type	
reg_id	644e1dd7-2a7f-18fb-b8ed-ed78c3f92c2b	A Universally unique identifier (UUID) issued by the system to an entity upon registration	String	
organisation_type	COMPANY	The Type of Organization is this **Options:** COMPANY, ASSOCIATION, GOVERNMENT ORGANISATION, NON-GOVERNMENT ORGANISATION, LAW ENFORCEMENT AGENCY, MILITARY	String	
registered_name	Land Holdings LTD	Official Name of the Organization as registered in the country of registration	String	

REGIONAL MCS STANDARDS

registered_number	321654987	Company or Organizations registration number	String	
country_registered	CK	Country that the organisation is registered or incorporated in. Represented as a 2 character country code as defined in the ISO 3166-1-Alpha-2	String	
status	APPROVED	The status of the registry: **Options:** PENDING,APPROVED,REJECTED	String	Yes
verification_level	LEVEL 1	The level of verification: **Options:** LEVEL 0, LEVEL 1, LEVEL 2, LEVEL 3. LEVEL 0 = Not verified yet. LEVEL 1 = Online verification. LEVEL 2: Level 1 plus background checks on international and regional blacklists. LEVEL 3 = Level 2 plus in person verification by an authorised officer.	String	Yes
scope	**Options:** National, Multi-National, Regional, International	The scope of operations of the organization	String	
Supporting Documents	https://licensing.tklapp.com/uploads/certificate-of-incorporation.pdf	Upload of supporting documentation for the organisation e.g. Certificate of Incorporation etc.	String	
url	https://opencorporates.com/companies/my/472899	A link to the original record	String	

LEVEL 3: VESSEL COMMUNICATIONS

Purpose: Provides proof that a vessels communications device is actually what is installed

Function: Capture, store and transmit information about a vessels communications device across systems

Field	Example	Description	Data Type	Rft

REGIONAL MCS STANDARDS

reg_id	644e1dd7-2a7f-18fb-b8ed-ed78c3f92c2b	A Universally unique identifier (UUID) issued by the system to an entity upon registration	String	Yes
platforms	Iridium	The type of communications platform **Options:** Iridium, Inmarsat, other	String	Yes
serial_numbers	321654987	Hardware serial number on the comms device	String	Yes
comms_id_number	987654321	The number used to communicate with the device: **Notes:** Faria / Skywave use serial number as Comms ID Number, CLS have a unique Triton ID and this is different to the device serial number. Inmarsat use DNID number as the Comms ID Number.	String	Yes
model	Iridium - Faria Watchdog	The type approved model	String	Yes
installer_name	John Doe	The name of the installer	String	Yes
installer_email	john.doe@gmail.com	The email address of the installer	String	Yes
status	APPROVED	The status of the registry: **Options:** PENDING,APPROVED,REJECTED	String	
supporting_documents	https://licensing.tklapp.com/uploads/certificate-of-inspection.pdf	Upload of supporting documentation for the vessel communications device e.g. Certificate of Inspection etc.	String	
url	https://www.ffa.int/mtu/3211654987	A link to the original record	String	Yes

LEVEL 2: REGISTRATIONS

Purpose: Provides documentation supporting identification of entities

REGIONAL MCS STANDARDS

Function: Capture, consolidate and transmit the verified identity of an entity from different systems.

Field	Example	Description	Data Type
reg_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 that is issued to every Registration	String
status	APPROVED	The status of the registry. **Options:** PENDING, APPROVED, REJECTED, REVOKED	String
verification_level	LEVEL 1	The level of verification: **Options:** LEVEL 0, LEVEL 1, LEVEL 2, LEVEL 3. LEVEL 0 = Not verified yet. LEVEL 1 = Online verification. LEVEL 2: Level 1 plus background checks on international and regional blacklists. LEVEL 3 = Level 2 plus in person verification by an authorised officer.	String
reg_org	FFA	The organisation where the vessel is registered	String
reg_name	Vessel Registry	The name of the Registry the entity has been recorded	String
reg_issued_no	12345	The unique identifier of the Entity in the Registry it is recorded in e.g. FFA VID	Integer
type	VESSEL	The type of Entity. **Options:** VESSEL,ORGANISATION,PERSON,PROCESSING PLANT,FAD,MTU,PORT,COLD STORE,COUNTRY	String
name	NIKKO MARU	The name of the Entity	String
known_aliases	OMAEZAKI MARU	The other names the Entity is known by	String
status	PENDING	The Status of the permit. **Options:** PENDING,APPROVED,REVOKED,REJECTED	String
date_registered	2017-03-24	The date that the entity registered. Format YYYY-MM-DD	Date
date_expired	2018-03-24	The date that the entity needs to renew their registration. Format YYYY-MM-DD	Date
message	Vessel Nikko Maru has been registered on FFA's vessel registry	A message of the registration	Text

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url	https://registry.ffa.int/public.php?id=12345	A link to the original record from the source system	String

LEVEL 2: AUTHORISATIONS

Purpose: Provides evidence that an entity's claims to what it's permitted to do, own or access is true.

Function: Capture, consolidate and transmit verified rights issued to an entity from different systems.

Field	Example	Description	Data Type
auth_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122. It is issued to every Authorisation	String
reg_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 that is issued to every Entity	String
reg_issued_no	1234	Unique identifier issued by a registry to an entity e.g. FFA VID, WCPFC VID, IMO, Flag State Registration Number etc.	Integer
entity_type	VESSEL	The type of Entity. ***Options:*** VESSEL,ORGANISATION,PERSON,PROCESSING PLANT,FAD,MTU,PORT,COLD STORE,COUNTRY	String
status	APPROVED	The status of the registry. ***Options:*** PENDING,APPROVED,REJECTED,REVOKED	String
authorisation_to	CATCH FISH	The type of activity, access or ownership that has been granted. ***Options:*** CATCH FISH,TRANSHIP CATCH,UNLOAD CATCH,PROCESS CATCH ,EXPORT CATCH,ACCESS PORT,ACCESS ZONE,OWN QUOTA	String
authorisation_type	PERMIT	The type of authorisation: ***Options:*** PERMIT,LICENSE,CERTIFICATE,AGREEMENT	String
authorised_area	CK EEZ	Authorised Fisheries area, a 2 character code defined in SPC Fisheries Areas + EEZ	String
jurisdiction	CK	Jurisdiction that these rules apply to. Uses a 2 character country code as defined in ISO 3066-alpha-2	String

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authority	Ministry of Marine Resources	The Authority that is mandated to issue this authorisation	String
issued_by	Ben Ponia	The Authorising Officer who has approved this authorisation	String
issued_to	Nikko Maru	The name of the entity the authorisation has been issued to	String
entity_type	VESSEL	The type of entity being granted authorised. *Options:* VESSEL, PEOPLE, ORGANISATION, MTU,FAD,PROCESSING PLANT,COLD STORE	String
message	An authorisation to fish has been issued to the vessel Nikko Maru on the 10th of March, 2018 by the Cook Islands Ministry of Marine Resources. This permit is valid from the 12th of March, 2018 to the 12th of March, 2019	A message of the authorisation being granted	Text
url	https://permit.ffa.int/public.php?id=12345	A link to the original record from the source system	String
date_issued	2018-03-10	Date the authorisation was Issued. Format YYYY-MM-DD	Date
date_start	2018-03-12	Date the authorisation becomes valid. Format YYYY-MM-DD	Date
date_end	2019-03-12	Date the authorisation becomes invalid. Format YYYY-MM-DD	Date

LEVEL 1: TRANSACTIONS

Purpose: Find, locate and verify specific MCS transactions.

Function: Capture, consolidate and transmit MCS transactions from different systems.

Field	Example	Description	Data Type
trx_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 that is issued for every Transaction	String
auth_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 that is issued for every Authorisation	String

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reg_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 that is issued for every Registration	String
verb	REGISTER	The type of transaction being recorded. **Options:** REGISTER, AUTHORISE, INSPECT, INVESTIGATE, FINE,WARN,PROSECUTE,BLACKLIST, TRANSHIP, ALLOCATE,ENTER,EXIT,CLOSE,LIMIT etc.	String
noun	VESSEL	The type of thing or entity the transaction is associated to. **Options:** VESSEL, PERSON, ORGANISATION, FAD, PLANT,ZONE,PORT,QUOTA etc.	
org	FFA	The organisation where the transaction originates. **Options:** FFA,WCPFC,SPC,MMR,NORMA,MIMRA,MFMR,AFMA, MPI,TOF etc.	String
system_name	Vessel Registry	The name of the system where the transaction originates	String
reg_issued_no	12345	The unique identifier of the entity involved in the transaction e.g. FFA VID	Integer
entity_type	VESSEL	The type of Entity associated with this transaction. **Options:** VESSEL,ORGANISATION,PERSON,PROCESSING PLANT,FAD,MTU,PORT,COLD STORE,COUNTRY,SENSOR	String
entity_name	NIKKO MARU	The name of the Entity associated with this transaction	String
entity_email	niko@gmail.com	The email address of the entity	String
transaction_date	2017-03-24	The date that the entity registered	Date
message	John Doe renewed NIKKO MARU Good Standing registration on the 24th of March 2017	A message of the transaction	Text
tags	Good Standing,Registration,Vessel,FFA	Tags to help filter and organise records	String
url	https://registry.ffa.int/public.php?id=12345	A link to the original record from the source system	String

Regional MCS Standards

Level 1: IMS Registry

Purpose: Register IMS systems and the Public Keys that they use to verify transactions

Function: Used to capture and store the public keys of IMS systems responsible for signing transactions. These public keys are used by other external systems to verify the authentication of a specific transaction. Private keys are stored with the respective systems and are used to create the digital signature.

Field	Example	Description	Data Type
system_id	7e97f214-b49a-47ea-913c-71282a09702c	Universally unique identifier (UUID version 4) as defined in RFC 4122 that is issued for every system	String
system_status	1	The Status of the System. Options are 1 for enabled and 0 for disabled	Integer
system_uri	https://permit.ffa.int	A URI for the system that issues authorisations	String
system_public_key	-----BEGIN PUBLIC KEY----- MIGfMA0GCSqGSIb3DQEBAQUA A4GNADCBiQKBgQCqGKukO1De 7zhZj6+H0qtjTkVxwTCpvKe4eCZ 0 FPqri0cb2JZfXJ/DgYSF6vUpwmJ G8wVQZKjeGcjDOL5UlsuusFncCz WBQ7RKNUSesmQRMSGkVb1/ 3j+skZ6UtW+5uo9lHNsj6tQ51s1S PrCBkedbNf0Tp0GbMJDyR4e9T0 4ZZwIDAQAB -----END PUBLIC KEY-----	The public key that is used by other systems to verify the authenticity of a transaction from a particular system	Text
organisation	FFA	The organisation where the transaction originates. ***Options:*** FFA,WCPFC,SPC,MMR,NORMA,MIMRA,MFMR,AFMA,MPI,TOF etc.	String

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system_name	Vessel Registry	The name of the system where the transaction originates	String
date_created	2018-03-01	The date the system was registered. Format YYYY-MM-DD	Date
date_updated	2018-04-01	The date the system was updated. Format YYYY-MM-DD	Date
ip_address	202.65.23.101	The ip address of the system	String
user_email	ano.tisam@ffa.int	The email address of the systems administrator	String

LEVEL 1: DIGITAL TOKENS

Purpose: Provides digital evidence that a recorded transaction is authentic

Function: Used to sign, verify and transmit evidence that a transaction is in fact authentic

Field	Example	Description	Data Type
iss	https://permit.ffa.int	The URI of the server or system that has issued the digital signature	String
sub	7e97f214-b49a-47ea-913c-71282a09702c	The universally unique identifier (UUID version 4) as defined in RFC 4122 of the entity that has been issued the signature	String
aud	Land Holdings LTD	The name of the entity this signature has been issued to	String
exp	321664987	The unix time of when the signature will stop being valid	Integer
nbf	321654000	The unix time of when the signature will start to be valid	Integer
iat	321654987	The unix time of when the signature was issued	Integer

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jti	7e97f214-b49a-47ea-913c-71282a09702c	The universally unique identifier of the transaction	String
hash	c54df3b901f4bb4878d82c9ec18c467396cb8d184bae4c9dfc642a2d0520e6fb	A digital fingerprint of the payload	String
payload	eyJoeXAiOiJKV1QiLCJhbGciOiJIUzUxMiJ9.eyJpc3MiOiJPbmxpbmUgSldUIEJ1aWxkZXIiLCJpYXQiOjE1MzIzMTYxNDUsImV4cCI6MTU2Mzg1MjE0Nywi YXVkIjoid3d3LmV4YW1wbGUuY29tIiwic3ViIjoianJvY2tldEBleGFtcGxlLmNvbSIsIkdpdmVuTmFtZSI6IkpvaG5ueSIsIlN1cm5hbWUiOiJSb2NrZXQiLCJFbWFpbCI6Impyb2NrZXRAZXhhbXBsZS5jb20iLCJSb2xlIjpbIk1hbmFnZXIiLCJQcm9qZWN0IEFkbWluaXN0cmF0b3IiXX0.WaK-veGpHA2yDROqI8kq9faXjeujw7Wgd9u4zMh6YiE4IsrnlXar-vdMXVVVgxXHGmTizupKa9M9BkyqgBVZ8Q	A json web token representation of the data that is signed and encrypted	Text
alg	RS512	The method used to encrypt the data. **Options:** HS256,HS384,HS512,RS256,RS384,RS512,ES256,ES384,ES512	string

GLOSSARY OF TERMS

Entity: A thing e.g. Vessel, Person, Organisation etc.

Authorisation: A mechanism for control issued to an Entity e.g. Certificate, Permit, License etc.

Good Standing: A vessel, person or organisation in good standing is regarded as having complied with all their explicit obligations, while not being subject to any form of sanction, suspension or disciplinary censure.

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Certificate of Good Standing: Certificate of Good Standing, also called a "Certificate of Existence" or "Certificate of Authorisation," is a state-issued document that shows that an entity has met its statutory requirements and is authorised to do business in that state.

Original Record: Refers to the source at which a record was captured.

System: A set of components working together as parts of a mechanism or network. Components of a system can be data, checklists, roles and responsibilities, information systems, standards, policies, procedures & processes, legislation etc.

Data feed: A data feed is an ongoing stream of structured data that provides users with updates of current information from one or more sources.

Hash: A digital fingerprint that is unique to a specific record. Changes in the record change the records fingerprint.

Public Key: A special key issued by a particular system, to other systems. This key is used to verify the authenticity of a record.

JSON: stands for javascript object notation and is a lightweight syntax for storing and exchanging data. Alternatives to JSON are things like XML, CSV etc.

INTENDED USERS

The following are the intended users of the standard

- MCS officials and managers
- project managers / product managers
- business analysts / systems analysts
- solution providers / systems integrators / systems developers

Standards Development Process

The following are steps to follow to develop MCS standards.

Step 1: Purpose

We identify a clear MCS purpose and function for each standard that is to be developed.

Step 2: Collection

We collect information from as many sources as possible to establish a consolidated **baseline**. This is based on what is currently being collected, what should be collected and what needs to be collected. Sources of collection could be from country visits; data & process mapping workshop sessions; existing systems and standards; from international, regional and national source documents; consultants work; etc.

Step 3: Processing

We consolidate the data collected into a baseline document. Stakeholders are identified and the baseline data is "cleaned" using the following processes:

- **Extraction:** A process to extract only the the minimum necessary data fields to meet the stated purpose
- **Clustering**: A process to combine similar data elements together to eliminate duplication
- **Abstraction**: A process to abstract data elements to a generic form to reduce complexity
- **Normalisation**: A process to separate out related data elements to increase integrity
- **Digitisation**: A process to add digital data elements to improve efficiency

Key Points: *Ensure the techniques being applied don't undermine the MCS purpose (Requires engagement of MCS experts at every stage of the process).*

Step 4: Prototype

Set hypothesis, build prototypes and validate assumptions. Adjust as required and repeat process if necessary.

Step 5: Peer Review

Final review of the standards to ensure it meets its stated purpose.

Step 6: Draft

Draft the standards document.

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