Control de Cambios:

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| **Versión** | **Descripción** | **Fecha de modificación** |
| 1.0 | Versión inicial | 25/08/2017 |
| 1.1 | Adaptación de abstracción de modelo de datos CERIF construido para la plataforma interinstitucional CEIBA al caso de uso de la Universidad del Valle. Modificadas las colecciones cfFacil, cfOrgUnit, cfEquip y cfPAddr, así mismo modificadas varias de sus relaciones con otras colecciones. Se adicionaron las colecciones space, request, practice, project, qr, headquarter y faculty. | 02/03/2018 |
| 1.2 | Se adiciona a la descripción del modelo de datos la colección faculty. Modificadas las colecciones cfFacil y headquarter. Al requerir la información de dirección física de cada laboratorio deberá obtenerse a través de la consulta de la sede a la que pertenece. Ahora cada dirección de sede (subsede) puede contener una o más direcciones electrónicas. | 05/03/2018 |
| 1.3 | Cambio de nombre de plural a singular de varias colecciones (rol, user, headquarter y permission). Se eliminan los prefijos cf en los atributos de las colecciones que no hacen parte del modelo CERIF original que contenían variables con dicho prefijo (headquarter, project, faculty). Se adiciona colección logger, entre otros varios atributos adicionados a la colección cfFacil, cfPers y user que se especifican en el control de revisiones. | 12/03/2018 |
| 1.4 | Modificación del modelo de datos de acuerdo a algunas necesidades identificadas durante la reunión del viernes 16 de marzo de 2018 con el profesor Julien Wist y el representante legal de GOPROCESS, Daniel Osorio. Para mayores detalles de los cambios realizados remitirse al control de revisiones de este mismo documento. | 21/03/2018 |
| 1.5 | Se modifica modelo de datos para corregir la manera en que se clasifican las colecciones a través de los esquemas de clase y las clases. Para mayores detalles de los cambios realizados remitirse al control de revisiones de este mismo documento. | 11/04/2018 |

Control de revisiones:

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| **Versión** | **Ejecuta** | **Fecha de revisión** | **Comentarios** |
| 1.0 | Julián Rodríguez | 25/08/2017 | Versión 1.0 aprobada en reunión de planeación y diseño en la fecha 22/08/2017. Se ejecutaron los cambios acordados y se incluyeron en el modelo las variables sugeridas durante el desarrollo de dicha reunión.  Se deja en claro que el modelo de datos puede variar durante el ciclo de vida del proyecto en ejecución debido a dos razones. La primera es la redefinición de atributos del formato CERIF o la definición de aquellos atributos no explícitamente definidos en el documento “E1A1-2-3\_Modelo CERIF Reducido” durante el diseño del modelo de datos. Lo anterior indica que una definición (en los casos de los atributos no definidos y en su momento no considerados necesarios para guardar en la base de datos del sistema interinstitucional) o redefinición de los atributos considerados necesarios para la comunicación de la aplicación con sistemas externos, podría requerir cambios en tipos de datos o incluso en estructura de la información en algunos nodos o entidades representados en el modelo de datos en su versión actual, sin embargo, no se supone que estos cambios sean complejos de realizar en caso de ser necesarios. La optimización de la aplicación es la segunda razón y objeto por el cual el modelo de datos podría variar en su estructura de información durante la fase de desarrollo. |
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| 1.1 | Julián Rodríguez | 02/03/2018 | Versión 1.0 modificada y ajustada según necesidades de la Universidad del Valle. Colecciones “request”, “space” y “qr” (entre otras) fueron adicionadas desde el modelo propuesto por el personal de Geoprocess y ajustadas al modelo propuesto para SIGELab, sin embargo, algunos tipos de datos de algunos atributos y sus respectivas descripciones son desconocidas. El modelo actual cuenta con las características suficientes para suplir la mayoría de las funcionalidades del sistema, pero seguramente no la totalidad de ellas. Se deja a discreción del proveedor adicionar los atributos y/o colecciones que considere necesarias para suplir la totalidad de las funcionalidades descritas en el documento de requerimientos. |
| 1.2 | Julián Rodríguez | 05/03/2018 | La colección faculty a la descripción del modelo. Se elimina el atributo cfPAddr de la colección cfFacil, en su lugar se adiciona el atributo subHqId que referencia la key que identifica una subsede en un documento que contiene toda la información de una sucursal o sede regional de la universidad, así, se requiere obtener la información de dirección física de cada laboratorio deberá obtenerse a través de la consulta de la sede a la que pertenece.  Se modificó la estructura de la información de la colección headquarter, ahora cada subsede tiene un identificador autogenerado por la aplicación o firebase, las subsedes no contienen únicamente una referencia a la dirección, sino que pueden tener un número no determinado de direcciones electrónicas (números de contacto o correos electrónicos). |
| 1.3 | Julián Rodríguez | 12/03/2018 | Debido a algunas consultas recibidas de parte del equipo de desarrollo del proveedor, se realizaron algunos cambios para aclarar el diseño del modelo de datos. Se realizó un cambio de nombre de plural a singular de varias colecciones (rol, user, headquarter y permission).  Se eliminó los prefijos cf en los atributos de las colecciones que no hacen parte del modelo CERIF original que contenían variables con dicho prefijo (headquarter, project, faculty).  Se adicionó la colección logger con el fin de proveer un sistema de seguimiento de cambios realizados.  Se adicionó a la colección cfPers una referencia a un documento tipo user.  Se adicionó a la colección user una referencia a un documento tipo cfPers. Se adicionó un atributo cfEAddr para la colección cfFacil Se adicionó un atributo suggestedChanges a la colección cfFacil.  Se adicionó atributo facilActivity a cfFacil.  Se adicionó atributo mainSpace a cfFacil. |
| 1.4 | Julián Rodríguez | 21/03/2018 | En esta versión se incluyeron pequeños cambios en los atributos de algunas colecciones que no impactan significativamente el modelo, estos cambios se listan a continuación:  Se adicionó el atributo cfClassScheme a la colección cfPers.  Se adicionó el atributo cfClassScheme a la colección cfSrvReserv.  Se modificó el atributo faculty (ahora faculties) para convertirlo en un tipo de dato objeto (JSON) en la colección cfFacil.  Se modificó el atributo department (ahora departments) para convertirlo en un tipo de dato objeto (JSON) en la colección cfFacil.  Se adicionó referencia a cfClass en la colección cfPAddr.  Se adicionó referencia a cfClassScheme en la colección cfPAddr.  Se adicionó referencia a cfClassScheme en la colección cfMeas.  Se adicionó referencia a cfOrgUnit en la colección cfPers.  Se modificó la estrutura del atributo suggestedChanges en los identificadores faculties y departments (ahora de tipo objetos JSON).  Se modificó el nombre del atributo subHqId (ahora subHq) en la colección cfFacil.  Se modificó el nombre del atributo cfOrgUnitId (ahora cfOrgUnit) en la colección cfFacil.  Se modificó el atributo providersInfo de la colección request. Contact numbers y attachments son ahora objetos. |
| 1.5 | Julián Rodríguez | 11/04/2018 | Se modifica modelo de datos para corregir la manera en que se clasifican las colecciones a través de los esquemas de clase y las clases. Se listan a continuación los cambios realizados:  Se eliminó atributo “entityType” de la colección cfClass.  Se eliminó atributo “relatedClassSchemes” de la colección cfClass.  Se modificó nombre de atributo “relatedClases” a “relatedClasses” en colección cfClass.  Se adicionó atributo “relatedClasses” a la colección cfClassScheme. |

Descripción de atributos del modelo de datos:

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| --- | --- | --- | --- | --- |
| **Collection/Node Name** | cfOrgUnit | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfOrgUnitId> | String | - | No | Autogenerated id by firebase |
| cfCurrCode | String | "COP" | No | Organization currency |
| cfAcro | String | - | No | Autogenerated acronym from organization name by applicaciton |
| cfHeadcount | Integer | 0 | No | - |
| cfTurn | Integer | 0 | No | - |
| cfURI | String | - | No | Organization Uniform Resource Identifier |
| cfName | String | - | No | Organization name |
| cfResAct | String | - | No | Organization research activity description |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfKeyw | Array | [] | No | Keywords to search by |
| cfEAddr | JSON | - | No | - |
| <cfEAddrId> | String/JSON | - | No | Autogenerated hash by application |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection (type of electronic address) |
| cfEAddrValue | String | - | No | Electronic address value (email or phone number) |
| relatedHeadquarters | JSON | {} | No | - |
| <headquarterId> | Reference:Boolean | TRUE | No | Reference an id of headquarter collection |
| relatedFaculties | JSON | {} | No | - |
| <facultyId> | Reference:Boolean | TRUE | No | Reference an id of faculty collection |
| active | Boolean | TRUE | No | Specifies if an organization remains active in the system |
| logoURL | String | - | No | - |
| cfAvailabilty | String | - | No | - |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |
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| --- | --- | --- | --- | --- |
| **Collection/Node Name** | cfFacil | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfFacilId> | String | - | No | Autogenerated id by firebase |
| cfAcro | String | - | No | Autogenerated acronym from facility name by applicaciton |
| cfURI | String | - | No | Facility Uniform Resource Identifier |
| cfName | Integer | - | No | Facility Name |
| cfDescr | Integer | - | No | Faiclity description |
| cfKeyw | Array | [] | No | Keywords to search by |
| headquarter | Reference | - | No | Reference an id of headquarter collection |
| faculties | JSON | - | No | - |
| <facultyId> | Reference:Boolean | TRUE | No | Reference an id of faculty collection |
| departments | JSON | - | No | - |
| <facultyId> | JSON | - | No | - |
| <departmentId> | Reference | - | No | Reference an id of departments object from faculty collection |
| cfClass | Reference | - | No | Organization name |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| subHq | Reference | - | No | Reference a key from subHeadquarters json of headquarter collection |
| cfAvailabilty | String | - | No | - |
| cfConditions | Array | [] | No | Collection of conditions |
| cfOrgUnit | Reference | - | No | Reference an id of cfOrgUnit collection |
| facilityAdmin | Reference | - | No | Reference an id of cfPers collection |
| cfEAddr | JSON | - | No | - |
| <cfEAddrId> | String/JSON | - | No | Autogenerated hash by application |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection (type of electronic address) |
| cfEAddrValue | String | - | No | Electronic address value (email or phone number) |
| facilActivity | JSON | - | No | - |
| teaching | Boolean | FALSE | No | True if the laboratory practice teaching activity |
| research | Boolean | FALSE | No | True if the laboratory practice research activity |
| extension | Boolean | FALSE | No | True if the laboratory practice extension activity |
| mainSpace |  |  |  |  |
| suggestedChanges | Array:JSON | [] | No | This attribute contains all the laboratory changes suggested (as a JSON) by the active personal to be approved by the facility admin. The JSON does not have to contain all the specified keys, just those which make part of the suggestion |
| cfName | String | - | Yes | Suggested facility name |
| createdAt | String | Current | No | Creation date and time |
| createdBy | Reference | - | No | Reference an id of cfPers collection |
| cfAvailability | String | - | Yes | Suggested facility schedule. Google calendar output |
| faculties | JSON | - | No | - |
| <facultyId> | Reference:Boolean | TRUE | No | Suggested faculty id. Reference an id of faculty collection |
| departments | JSON | - | No | - |
| <facultyId> | JSON | - | No | - |
| <departmentId> | Reference | - | No | Suggested department key. Reference a key of department JSON from a faculty document |
| cfEAddr | JSON | - | Yes | JSON with keys “new” and “existing” which contains suggested cfEAddr changes for the facility. |
| new | Array:JSON | {} | No | This attribute contains the new cfEAddr info to be added if approved by facility admin |
| <cfEAddrId> | String | - | No | Autogenerated hash by application |
| cfClass | Reference | - | No | Reference to an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference to an id of cfClassScheme collection |
| cfEAddrValue | String | - | No | New suggested cfAddrValue |
| existing | Array:JSON | {} | No | This attribute contains the new cfEAddr info to be replaced if approved by facility admin |
| <cfEAddrId> | Reference | - | No | Reference one key of the existing cfEAddr JSON |
| cfEAddrValue | String | - | No | New suggested cfAddrValue |
| facilityAdmin | Reference | - | Yes | Reference an id of |
| facilActivity | JSON | - | Yes | - |
| Teaching | Boolean | - | No | True if the personal who suggested this changes mark teaching as activity |
| research | Boolean | - | No | True if the personal who suggested this changes mark research as activity |
| extension | Boolean | - | No | True if the personal who suggested this changes mark extension as activity |
| relatedSpaces | JSON | {} | Yes | - |
| new | Array:JSON | [] | No | This attribute contains the new possible documents to be added to the space collection if the facility admin approves the suggested changes. |
| spaceData | JSON | - | No | - |
| building | String | - | No | Building name or number |
| place | String | - | No | Name or number of the office inside the building |
| geoRep | JSON | {} | Yes | Geo representation of the place |
| totalArea | String | “” | Yes | - |
| ocupedArea | String | “” | Yes | - |
| minArea | String | “” | Yes | - |
| freeArea | String | “” | Yes | - |
| capacity | String | “” | Yes | - |
| indxSa | Unknown | - | Yes | - |
| map | Unknown | - | Yes | - |
| relatedFacilities | JSON | {} | No | - |
| <facilityId> | Reference | facilityId | No | Reference to the id of the facility to which the personal suggest to change the info |
| isMain | Boolean | false | No | This attribute specifies if the new space should be the main space for the laboratory |
| existing | Array:JSON | [] | Yes | This attribute contains the suggested changes to the existing collection |
| relatedSpaces | JSON | {} | No | - |
| <spaceId> | Reference | - | No | Reference an id of space collection |
| mainSpace | Reference |  | No | Reference an id of space collection |
| relatedPers | JSON | {} | No | - |
| <cfPersId> | Reference:Boolean | TRUE | No | Reference an id of cfPers collection |
| relatedEquipments | JSON | {} | No | - |
| <cfEquipId> | Reference:Boolean | TRUE | No | Reference an id of cfEquip collection |
| relatedMeasurement | JSON | {} | No | - |
| <cfMeasId> | Reference:Boolean | TRUE | No | Reference an id of cfMeas collection |
| relatedServices | JSON | {} | No | - |
| <cfSrvId> | Reference:Boolean | TRUE | No | Reference an id of cfSrv collection |
| relatedFacilities | JSON | {} | No | - |
| <cfFacilId> | Reference:Boolean | TRUE | No | Reference an id of cfFacil collection |
| relatedSpaces | JSON | {} | No | - |
| <spaceId> | Reference:Boolean | - | No | Reference an id of space collection |
| relatedPractices | JSON | {} | No | - |
| <practiceId> | Reference:Boolean | - | No | Reference an id of practice collection |
| relatedRequests | JSON | {} | No | - |
| <requestId> | Reference:Boolean | - | No | Reference an id of request collection |
| relatedProjects | JSON | {} | No | - |
| <projectId> | Reference:Boolean | - | No | Reference an id of project collection |
| cfPrice | Float | - | No | - |
| cfCurrCode | String | "COP" | No | - |
| active | Boolean | TRUE | No | Specifies if a facility remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | cfMeas | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfMeasId> | String | - | No | Autogenerated id by firebase |
| cfURI | String | - | No | Measure Uniform Resource Identifier |
| cfName | String | - | No | Measure name |
| cfDescr | String | - | No | Measure description |
| cfKeyw | Array | [] | No | Keywords to search by |
| cfClass | Reference | - | No | Organization name |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfEquip | Reference | - | No | Reference an id of cfEquip collection |
| active | Boolean | - | No | Specifies if a measure remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedA | String/DateTyme | Current | No | Last update date and time |

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| --- | --- | --- | --- | --- |
| **Collection/Node Name** | cfPAddr | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfPAddrId> | String | - | No | Autogenerated id by firebase |
| cfCountryCode | String | "CO" | No | Physical address country code |
| cfAddrline1 | String | - | No | - |
| cfAddrline2 | Integer | 0 | No | - |
| cfAddrline3 | Integer | 0 | No | - |
| cfAddrline4 | String | - | No | - |
| cfAddrline5 | String | - | No | - |
| cfPostCode | String | - | No | Physical address postal code |
| cfCityTown | String | [] | No | Physical address city name |
| cfStateOfCountry | String | - | No | Physical address state name |
| cfURI | String | - | No | Physical Uniform Resource Identifier |
| cfCountry | JSON | - | No | - |
| cfURI | String | - | No | Country Uniform Resource Identifier |
| cfName | String | "Colombia" | No | Country name |
| cfCountryCode | String | "CO" | No | Country code |
| cfClass | Reference | - | No | Organization name |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| geoRep | JSON | {} | No | Geo representation of the address |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| --- | --- | --- | --- | --- |
| **Collection/Node Name** | cfEquip | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfEquipId> | String | - | No | Autogenerated id by firebase |
| cfAcro | String | - | No | Autogenerated acronym from equipment name by applicaciton |
| cfURI | String | - | No | Equipment Uniform Resource Identifier |
| cfName | String | - | No | Equipment name |
| cfDescr | String | - | No | Equipment description |
| cfKeyw | Array | - | No | Keywords to search by |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfFacil | Reference | - | No | Reference an id of cfFacil collection |
| cfPers | Reference | - | No | Reference an id of cfPers collection |
| relatedSrv | JSON | {} | No | - |
| <cfSrvId> | Reference:Boolean | - | No | Reference an id of cfSrv collection |
| relatedMeas | JSON | {} | No | - |
| <cfMeasId> | Reference:Boolean | - | No | Reference an id of cfMeas collection |
| components | JSON | {} | No | - |
| <componentId> | String:JSON | - | No | Autogenerated id by application to recognize a json object. This JSON contains detailed info for every single component of the equipment This is Class, ClassScheme, Name, Conditions, Description, Price, Brand and model. |
| qr | Reference | - | No | Reference an id of qr collection |
| space | Reference | - | No | Reference an id of space collection |
| brand | String | - | No | Equiment brand |
| model | String | - | No | Equipment model |
| price | Float | - | No | Equipment usage cost by time unit |
| timeUnit | String | - | No | Time unit |
| workingHours | String | - | No | Google Calendar string output |
| timeBeforeBooking | String | - | No | Time needed before make an equipment reservation |
| timeBeforeBookingUnit | String | - | No | Time unit |
| cfConditions | Array | [] | No | Collection of conditions required to use the equipment |
| active | Boolean | TRUE | No | Specifies if an equipment remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| --- | --- | --- | --- | --- |
| **Collection/Node Name** | cfEquipReserv | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfEquipReservId> | String | - | No | Autogenerated id by firebase |
| cfEquip | Reference | - | No | Reference an id of cfEquip collection |
| user | Reference | - | No | Reference an id of Users collection |
| cfStartDate | String/DateTyme | - | No | Reservation start date and time |
| cfEndDate | String/DateTyme | - | No | Reservation end date and time |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| status | String | "created" | No | Reservation status |
| conditionsLog | Array | - | No | - |
| conditionText | String | - | No | - |
| accepted | Boolean | - | No | - |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| --- | --- | --- | --- | --- |
| **Collection/Node Name** | cfSrv | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfSrvId> | String | - | No | Autogenerated id by firebase |
| cfAcro | String | - | No | Autogenerated acronym from service name by applicaciton |
| cfURI | String | - | No | Service Uniform Resource Identifier |
| cfName | String | - | No | Service name |
| cfDescr | String | - | No | Service description |
| cfKeyw | Array | - | No | Keywords to search by |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfFacil | Reference | - | No | Reference an id of cfFacil collection |
| cfConditions | Array | - | No | Collection of conditions |
| relatedServices | JSON | {} | No | - |
| <cfSrvId> | Reference:Boolean | - | No | Reference an id of cfSrv collection |
| relatedMeasurements | JSON | {} | No | - |
| <cfMeasId> | Reference:Boolean | - | No | Reference an id of cfMeas collection |
| relatedEquipments | JSON | {} | No | - |
| <cfEquipId> | Reference:Boolean | - | No | Reference an id of cfEquip collection |
| variations | JSON | {} |  |  |
| <variationId> | String | - | No | Autogenerated id by application to recognize a json object. This JSON contains detailed info for every single variation of the service. This is Name, Conditions, Description and Price. |
| workingHours | String | - | No | Google Calendar string output |
| cfPrice | Float | - | No | Service price |
| cfCurrCode | String | "COP" | No | - |
| timeBeforeBooking | String | - | No | Time needed before make an equipment reservation |
| timeBeforeBookingUnit | Array | [] | No | Time unit |
| active | Boolean | TRUE | No | Specifies if a service remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | cfSrvReserv | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfSrvReservId> | String | - | No | Autogenerated id by firebase |
| cfSrv | Reference | - | No | Reference an id of cfSrv collection |
| selectedVariations | Array | [] | No | List of a selected variations ids |
| user | Reference | - | No | Reference an id of Users collection |
| cfStartDate | String/DateTyme | - | No | Reservation start date and time |
| cfEndDate | String/DateTyme | - | No | Reservation end date and time |
| cfClass | Reference | - | No | Reference an id of cfClassScheme collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClass collection |
| status | String | "created" | No | Reservation status |
| conditionsLog | Array | - | No | - |
| conditionText | String | - | No | - |
| accepted | Boolean | - | No | - |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| --- | --- | --- | --- | --- |
| **Collection/Node Name** | cfPers | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfPersId> | String | - | No | Autogenerated id by firebase |
| cfBirthdate | Date | - | No | - |
| cfGender | String | - | No | - |
| cfURI | String | - | No | Personal Uniform Resource Identifier |
| cfFamilyNames | String | - | No | Personal surnames |
| cfFirstNames | Array | - | No | Personal names |
| cfOtherNames | Array | [] | No | - |
| cfOrgUnit | Reference | - | No | Reference an id of cfOrgUnit collection |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfEAddr | JSON | - | No | - |
| <cfEAddrId> | String/JSON | - | No | Autogenerated hash by application |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection (type of electronic address) |
| cfEAddrValue | String | - | No | Electronic address value (email or phone number) |
| cfFacil | String | - | No | Reference an id of cfFacil collection |
| user | Reference | “” | No | Reference an id of user collection. Every personal must have a related user id. May be empty but not null. If it is empty it must be filled after the first login of the user |
| relatedEquipments | JSON | {} | No | - |
| <cfEquipId> | Reference:Boolean | - | No | Reference an id of cfEquip collection |
| active | Boolean | TRUE | No | Specifies if personal remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | space | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <spaceId> | String | - | No | Autogenerated id by firebase |
| cfOrgUnit | Reference | - | No | Reference an id of cfOrgUnit collection |
| headquarter | Reference | - | No | Reference an id of headquarter collection |
| spaceData | JSON | - | No | - |
| building | String | - | No | Building name or number |
| place | String | - | No | Name or number of the office inside the building |
| geoRep | JSON | {} | No | Geo representation of the space |
| totalArea | Float | 0 | No | Space total área |
| ocupedArea | Float | 0 | No | Space ocupied área |
| minArea | Float | 0 | No | - |
| freeArea | Float | 0 | No | Space free área |
| capacity | Integer | 0 | No | Space capacity |
| indxSa | Unknown | - | No | - |
| map | Unknown | Unknown | No | Space map |
| relatedFacilities | JSON | {} | No | - |
| <facilityId> | String/Reference | - | No | Reference an id of cfFacil collection |
| active | Boolean | TRUE | No | Specifies if the space remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | practice | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <practiceId> | String | - | No | Autogenerated id by firebase |
| cfName | String | - | No | Practice name |
| subjectCode | String | - | No | Code of the subject related to this practice |
| cfFacil | Reference | - | No | Reference an id of cfFacil collection |
| relatedEquipments | JSON | - | No | - |
| <cfEquipId> | Reference | - | No | Reference an id of cfEquip collection |
| programmingData | JSON | {} | No | - |
| <programmingId> | String/JSON | - | No | Autogenerated Id. Identify a json object |
| schedule | String | - | No | Google calendar output |
| noStudents | Integer | - | No | Number of the stundents for this practice |
| semester | String | - | No | Semester identifier for this practice |
| space | Reference | - | No | Reference an id of space collection |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| active | Boolean | TRUE | No | Specifies if the practice remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | request | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <requestId> | String | - | No | Autogenerated id by firebase |
| cfOrgUnit | Reference | - | No | Reference an id of cfOrgUnit collection |
| headquarter | Reference | - | No | Reference an id of headquarter collection |
| cfFacil | Reference | - | No | Reference an id of cfFacil collection |
| createdBy | Reference | - | No | Reference an id of cfPers collection |
| requestDesc | String | - | No | Request description content |
| requestType | String | - | No | Unknown |
| maintenanceType | String | - | No | Unknown |
| providersInfo | Array | - | No | - |
| Name | String | - | No | Name of a given provider |
| contactNumebers | JSON | {} | No | List of contact numbers for a given provider as an object |
| attachments | JSON | {} | No | List of attachments added to the request as an objects |
| relatedEquipments | JSON | {} | No | - |
| <cfEquipId> | String/Reference | - | No | Reference an id of cfEquip collection |
| relatedComponents | JSON | {} | No | - |
| <compnentId> | String/Reference | - | No | Reference a component json identifier from the equip components json object |
| status | String | “pending” | No | Request status |
| active | Boolean | TRUE | No | Specifies if the request remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | project | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <projectId> | String | - | No | Autogenerated id by firebase |
| cfOrgUnit | Reference | - | No | Reference an id of cfOrgUnit collection |
| ciNumber | String | - | No | Code of the project given from SICOP system |
| projectName | String | - | No | Project name |
| projectDesc | String | - | No | Project description |
| relatedPers | JSON | {} | No | - |
| <cfPersId> | String/Reference | - | No | Reference an id of cfPers collection |
| relatedFacilities | String/JSON | - | No | - |
| <cfFacilId> | String | - | No | Reference an id of cfFacil collection |
| active | Boolean | TRUE | No | Specifies if the project remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | qr | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <qrId> | String | - | No | Autogenerated id by firebase |
| cfOrgUnit | Reference | - | No | Reference an id of cfOrgUnit collection |
| cfEquip | Reference | - | No | Reference an id of cfEquip collection |
| secUrl | Unknown | - | No | Unknown |
| secQr | Unknown | - | No | Unknown |
| active | Boolean | TRUE | No | Specifies if the qr code remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | headquarter | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <headquarterId> | String | - | No | Autogenerated id by firebase |
| headquarterName | String | - | No | Headquarter name |
| cfOrgUnit | Reference | - | No | Reference an id of cfOrgUnit collection |
| subHeadquarters | JSON | {} | No | - |
| <subHqId> | String/JSON | {} | No | Autogenerated hash by application |
| cfEAddr | JSON | - | No | - |
| <cfEAddrId> | String/JSON | - | No | Autogenerated hash by application |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection (type of electronic address) |
| cfEAddrValue | String | - | No | Electronic address value (email or phone number) |
| cfPAddr | Reference |  | No | Reference an id of cfPAddrId collection |
| relatedFacilities | JSON | - | No | - |
| <cfFacilId> | Reference | - | No | Reference an id of cfFacil collection |
| active | Boolean | TRUE | No | Specifies if the qr code remains active in the system |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | faculty | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <headquarterId> | String | - | No | Autogenerated id by firebase |
| facultyName | String | - | No | Faculty name |
| facultyDesc | String | “” | No | Faculty description if provided |
| cfOrgUnit | Reference | - | No | Reference an id of cfOrgUnit collection |
| departments | JSON | {} | No | - |
| <deparmentId> | String/JSON | {} | No | Autogenerated hash by application |
| departmentName | String | - | No | Department name |
| departmentDesc | String | “” | No | Department description if provided |
| relatedFacilities | JSON | {} | No | - |
| <cfFacilId> | Reference:Boolean | - | No | Reference an id of cfFacil collection |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | cfClass | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfClassId> | String | - | No | CERIF provided id number |
| cfURI | String | - | No | Class Uniform Resource Identifier |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| def | JSON | - | No | - |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfDef | String | - | No | - |
| cfDefSrc | String | - | No | - |
| term | JSON | - | No | - |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfTerm | String | - | No | - |
| cfTermSrc | String | - | No | - |
| cfRoleExpr | String | - | No | - |
| cfRoleExprOpp | String | - | No | - |
| descr | JSON | - | No | - |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassScheme | Reference | - | No | Reference an id of cfClassScheme collection |
| cfDescr | String | - | No | - |
| cfDescrSrc | String | - | No | - |
| relatedClasses | Reference:JSON | - | No | - |
| <cfClassId> | Reference | - | No | Reference an id of cfClass collection |
| cfDescr | String | - | No | - |
| cfDescrSrc | String | - | No | - |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | cfClassScheme | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <cfClassSchemeId> | String | - | No | CERIF provided id number |
| cfURI | String | - | No | ClassScheme Uniform Resource Identifier |
| descr | JSON | - | No | - |
| cfClassSchemeId | Reference | - | No | Reference an id of cfClassScheme collection |
| cfDescr | String | - | No | - |
| cfDescrSrc | String | - | No | - |
| name | JSON | - | No | - |
| cfClassSchemeId | Reference | - | No | Reference an id of cfClassScheme collection |
| cfName | String | - | No | - |
| cfNameSrc | String | - | No | - |
| relatedClassScheme | JSON | - | No | - |
| <cfClassSchemeId> | Reference | - | No | Reference an id of cfClassScheme collection |
| cfClass | Reference | - | No | Reference an id of cfClass collection |
| cfClassSchemeId | Reference | - | No | Reference an id of cfClassScheme collection |
| relatedClasses | JSON | - | No | - |
| <cfClassId> | Reference:Boolean | True | No | Reference an id of cfClass collection |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | user | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <userId> | String | - | No | Autogenerated id by firebase |
| email | String | - | No | Login email |
| cfOrgUnit | Reference | "" | No | - |
| roles | JSON | {} | No | - |
| appRoles | JSON | {} | No | - |
| <appRoleId> | Reference:Boolean | - | No | Reference an id of an app role in roles collection |
| clientRoles | JSON | {} | No | - |
| <clientRoleId> | Reference:Boolean | - | No | Reference an id of a client role in roles collection |
| cfPers | Reference:String | Null | Yes | Reference to an id of cfPers collection. Since every user is not an organization personal, this attribute can be null and it should be null by default. |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | permission | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <moduleNameId> | String | - | No | Autogenerated id by firebase |
| value | JSON | - | No | - |
| permissionName | String:Boolean | FALSE | No | - |
| description | JSON | - | No | - |
| permissionName | String:String | - | No | Permission description |

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| **Collection/Node Name** | role | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| appRoles | JSON | - | No | - |
| <appRoleId> | String | - | No | Autogenerated id by firebase |
| roleName | String | - | No | - |
| description | String | - | No | - |
| active | Boolean | TRUE | No | - |
| permissions | JSON | {} | No | - |
| <moduleNameId> | Reference | - | No | Reference a moduleNameId in permissions collection |
| permissionName | String:Boolean | TRUE | No | Permission name |
| clientRoles | JSON | {} | No | - |
| <cfOrgUnitId> | Reference | - | No | Reference an id in cfOrgUnit collection |
| <clientRoleId> | String | - | No | Autogenerated id by firebase |
| roleName | String | - | No | - |
| description | String | - | No | - |
| active | Boolean | TRUE | No | Specifies if a client role remains active in the system |
| permissions | JSON | - | No | - |
| <moduleNameId> | Reference | - | No | Reference a moduleNameId in permissions collection |
| permissionName | String:Boolean | TRUE | No | Permission name |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |

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| **Collection/Node Name** | logger | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| <logId> | String | - | No | Autogenerated id by firebase |
| user | Reference | - | No | Reference an id of user collection |
| ipAddr | String | “” | No | Registered user ip addres where the action where performed |
| relatedDoc | Reference | - | No | Reference a document id |
| collectionName | String | - | No | - |
| currentVer | String/JSON | - | No | Autogenerated hash by application |
| previousVer | String | {} | No | Department name |
| createdAt | String/DateTyme | Current | No | Creation date and time |

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| **Collection/Node Name** | appContent | | | |
| **Attribute** | **Type** | **Default** | **Null** | **Description** |
| type | JSON | - | No | - |
| <typeId> | String | - | No | Autogenerated id by firebase |
| name | String | - | No | Name of the type of content |
| description | String | - | No | - |
| active | Boolean | TRUE | No | - |
| content | JSON | - | No | - |
| contentId | String | - | No | Autogenerated id by firebase |
| typeId | Reference | - | No | Reference an id on the types json in appContent collection |
| title | String | - | No | Content title |
| url | String | - | No | Autogenerated Content URL by application |
| active | Boolean | TRUE | No | Specifies if the created content remains active in the system |
| pageContent | String | - | No | HTML content |
| createdAt | String/DateTyme | Current | No | Creation date and time |
| updatedAt | String/DateTyme | Current | No | Last update date and time |