VeriSaaS vali-Das API v1

release 2021Q2 (v2.11.4)

Release	Date	Description	Author	Reviewer	Approver
2.26	05/08/2021	vali-Das SaaS API documentation update	ACR	GSS	MSY

1. Introduction

vali-Das is a software as a service (SaaS) provided by Veridas, which performs onboarding processes based on ID document validation and face biometry.

This service exposes a REST API that can be used to call all of its functions. This API allows to read the text fields printed on the ID documents (OCR) and verify security measures by using multiple techniques. It also allows biometric comparison between the photo printed on the ID document and a selfie photo. Finally, vali-Das allows to verify that the user carrying out the process shows evidence of being alive.

From an architecture point of view, vali-Das is an orchestration like service which manages the calls to the ID document analysis service called IDentidas, the face biometry service called das-Face and a proof of life service. vali-Das also is in charge of retrieving all the results and data which these microservices generate and make them available through its API, easing the process for doing an on-boarding.

2. vali-Das 2021Q2. What's new

This section presents the changes that have been introduced in the update of vali-Das 2021Q2

General

2.1. Deprecated

GET /document_types ***endpoint will be deprecated in 2021Q3 release. Please update your integrations with vali-Das by that date.***

2.2 Added and Improved

- Enhancement of the mechanisms to provide end2end SDK-backend evidences Integrity assurance
- New endpoint which allows to do the timestamp of the validation data (images, videos, etc.) and results with third party TSAs, and retrieve this time-stamped data after that.
- New "GET /document/ocr/field-description" endpoint which returns the description of the document nodes (OCR fields).
- A new section called ***challenges*** is now included in GET /validation/{id} endpoint response, containing the details of each challenge as long as a challenge was created and used in the validation process
- A new section called ***notValidatedScores*** is now included in *GET /validation/{id}/scores* endpoint response when the *global score* does not have a value equals to one. This allows to identify the scores which have penalized this global score.
- Improved error messages when using "Selfie Alive Pro" and "Proof Of Life" functionalities
- Improved comparison results between the document face photo and the selfie image for Colombia CO_IDCard_2020 document type thanks to a new filtering method.
- A Unique request ID will be returned since now to the VeriSaaS API users using the *x-request-id* header

2.3. Fixed

- Integrity score is now properly calculated when using the *POST /validation/document* endpoint
- Fix the behaviour of the endpoint GET validation when using the "from" and "to" query parameters

- It is only allowed to generate one challenge per type. If the user requests more than one challenge of a type, the previous challenge will be deleted and the new one will be saved.
- Document face image cut is now searched both in the obverse and in the reverse of the document. This -among others- fix the wrong biometry comparison with the Italy document IT_IDCard_2017
- Fix an error on the Colombian document CO_IDCard_2020 biometry comparison

Document validation

2.4. Added and Improved

Document Coverage

- Add the new Spanish document (ES_IDCard_2021). Add auto classification of this document to the groups ES and ES_ID.
- Add a new document the United States residence permit US_ResidencePermit_2017.
- Add a new document in Norway (NO_IDCard_2020).

Security Features

- Add photo replacement detection to General Passports (XX_Passport_YYY) with an FN of 1.5% and FP of 13%. This is represented in the score “ScoreGroup-PhotoAuthenticity”. The Photo Authenticity lever is deactivated by default.
- Add photo replacement detection to all Netherland documents (NL_DrivingLicense_2006, NL_DrivingLicense_2013, NL_DrivingLicense_2014, NL_IDCard_2011, NL_IDCard_2014) with a FN of 1.5% and a FP of 12%. The lever of ScoreGroup-PhotoAuthenticity is deactivated by default.
- Add replay detection only in Native platforms (iOS and Android) to General Passport (XX_Passport_YYYY) and Italian documents (IT_DrivingLicense_2000, IT_DrivingLicense_2013, IT_HealthCard_2004, IT_IDCard_2004, IT_IDCard_2016) with a FN of 1% and FP of 15%. The lever ScoreGroup-ReplayAttackTest is deactivated by default in all Italian documents and in the General Passport.
- Add replay detection to Web-mobile and to General Passport (XX_Passport_YYYY) and Italian documents (IT_DrivingLicense_2000, IT_DrivingLicense_2013, IT_HealthCard_2004, IT_IDCard_2004, IT_IDCard_2016) with a FN of 1% and FP of 9%. The lever ScoreGroup-ReplayAttackTest is deactivated by default in all Italian documents and in the General Passport.
- Add the score "ScoreGroup-PD_FiscalCode-DataValidity" as a lever in the Italian documents (IT_IDCard_2004, IT_IDCard_2016 and IT_HealthCard_2004). In the IT_IDCard_2004 document the lever is disabled.

- Add section 'Controles de seguridad Anti-spoofing / Anti-spoofing security checks' to the boidas-details of all documents with antispoofing scores.
- Add relation score ScoreRel-PD_Nationality_BackNoFlash-PD_Nationality_NFC-Text on Spanish document ES_ResidencePermit_2011.
- Add nationality VIZ-MRZ relation score at Peruan document PE_IDCard_2020.
- Update the list of nationalities that can be present in the Austrian document
- Add data validity scores to the Italian documents IT_DrivingLicense_2000, IT_DrivingLicense_2013, IT_IDCard_2004, IT_IDCard_2016, IT_IDCard_2017 and IT_HealthCard_2004.

Funnel Conversion

- Improve in Italian scores funnel by 10% and CER by 5% .
    - Change global score calculation in all the documents. There is an increment in the number of approved documents of 3% in the Italian documents IT_DrivingLicense_2000 and IT_DrivingLicense_2013.
    - Improve CER by 1% in the Fiscal Code field in the Italian documents (IT_IDCard_2004, IT_IDCard_2016 and IT_HealthCard_2004).
    - Improve CER in a 1% in the BirthDate field in the Italian Health Card documents (IT_HealthCard_2004).
    - Add new PD_FiscalCode_Out node for the Italian document: IT_HealthCard_2004.
    - Improve CER in names and last names by 3% in Italian documents: IT_DrivingLicense_2000, IT_DrivingLicense_2013, IT_HealthCard_2004, IT_IDCard_2004, IT_IDCard_2016, IT_IDCard_2017.
    - Improve CER by 8% in Change PD_Sex node in Italian document IT_HealthCard_2004.
    - Improve the text location algorithm in the Italian document IT_HealthCard_2004 in order to reduce the CER by 7% and improve the number of approved documents by 2%. The processing time increments 40%.
    - Reduce CER on the PD_Nationality_Out node at 16% in italian documents IT_IDCard_2017.
    - Improve text detection algorithm in the Italy document (IT_IDCard_2017) to reduce the CER by 6%, to improve the number of approved documents by 13%, and the processing time is reduced by 23.52%
    - Change the CAN, BirthCertificateCode and BirthPlaceMunicipality nodes in the Italian documents IT_IDCard_2004 and IT_IDCard_2016 to improve the CER 2% in case of IT_IDCard_2016 and 4% in case of IT_IDCard_2004.
    - Improve CER by 2% of PD_BirthPlaceState output node at the Italian document IT_HealthCard_2004.
- Improve documents scores by removing data validity scores related to Name, LastName, ExpeditionPlace, BirthPlace and Address from the Italian documents:
    - IT_DrivingLicense_2000: average score improves by 1%.
    - IT_DrivingLicense_2013: data validity score improves by 2%, global score a 0.5% and average score by 1%.

    - IT_HealthCard_2004: data validity score improves by 15% and average score by 1%.
    - IT_IDCard_2004: data validity score improves by 8%, global score by 4% and average score by 1%.
    - IT_IDCard_2016
    - IT_IDCard_2017.
- Add ExpeditionDate_out node as output node in italian documents IT_IDCard_2017 document.
- Improve text detection algorithm and improve scores computation in Brazil (BR_IDCard_2014). Reducing the CER a 13% overall and incrementing the number of approved documents by 10% also means the processing time is reduced by 10%.
- Add ExpeditionDate and ExpeditionPlace as output nodes in the Brazilian document BR_DrivingLicense_2017.Improve OCR reading in the Italian document(IT_IDCard_2017). It increases the percentage of approved documents by 2%, the CER decreases by 1%.
- Modify relations related to the identification number in the Great Britain driving licenses (GB_DrivigLicense_1998, GB_DrivingLicense_2007, GB_DrivingLicense_2014, GB_DrivingLicense_2015, GB_DrivingLicense-PL_1998, GB_DrivingLicense-PL_2007, GB_DrivingLicense-PL_2014, GB_DrivingLicense-PL_2015) improving the scores of Northern Ireland expedited documents.
- Improve mrz extraction algorithm in documents with type 2 and 3 mrz.
    - Passport (XX_Passport_YYYY)
    - Belgium (BE_IDCard_2008)
    - Czech Republic (CZ_IDCard_2003)
    - Germany (DE_IDCard_2007)
    - France (FR_IDCard_1994)
    - Rumania (RO_IDCard_2009).
    - Reduction of CER %:
        - 3% in Passport (XX_Passport_YYYY).
    - Improve of funnel:
        - 3% in Passport (XX_Passport_YYYY)
        - 1% in Germany (DE_IDCard_2007)
        - 1.5% in France (FR_IDCard_1994)
        - 6% in Romania (RO_IDCard_2009).
- Improve Spain documents (ES_IDCard_2006) classification and funnel by 6%.
- Add out Nodes Expedition Date and Expedition Place to Spain documents (ES_ResidencePermit_2020 and ES_ResidencePermit_2011).
- Change global score calculation in all the documents. There is an increment in the number of approved documents of 3% in the Spanish document ES_DrivingLicense_2013.
- Improve the text detection in the France document (FR_IDCard_1994) in order to reduce the CER 6%, the number of approved documents increase in a 13%, and the processing time reduced in 23.52%

- Remove issuing country dataValidity information from boidas in Mexican documents: MX_IDCard_2008, MX_IDCard_2013, MX_IDCard_2014, MX_IDCard_2019.
- Add CURP and Elector Key Exception Criteria in Mexico (MX_IDCard_2008, MX_IDCard_2013, MX_IDCard_2014, MX_IDCard_2019).
- Remove generated expiration date in Colombia (ID_Card_2020)
- Add issuing country output node at Colombian document (CO_IDCard_2020).
- Add Code39 decoding and DocumentNumber MRZ-Code39 relations in Uruguay (UY_IDCard_2015).
- Add nationality data validity score (`ScoreGroup-PD_Nationality-DataValidity`) to the following documents: Colombia (CO_IDCard_2020), Liechtenstein (LI_IDCard_1995), Mexico (MX_IDCard_2013, MX_IDCard_2014, MX_IDCard_2019), Peru (PE_IDCard_2007, PE_IDCard_2013), Poland (PL_IDCard_2001), United States (US-MI_DrivingLicense_2017, US-NY_DrivingLicense_2008)
- Add sex output nodes and sex data validity score (`ScoreGroup-PD_Sex-DataValidity`) to LI_IDCard_1995.
- Add nationality output node to the following documents: Mexico (MX_IDCard_2013, MX_IDCard_2014, MX_IDCard_2019), Peru (PE_IDCard_2007, PE_IDCard_2013), Poland (PL_IDCard_2001), Liechtenstein (LI_IDCard_1995), United States (US-MI_DrivingLicense_2017, US-NY_DrivingLicense_2008)
- AT_ResidencePermit_2005 improving the nationality data validity score by 15%.
- Add nationality data validity score to the Austrian document AT_ResidencePermit_2005.
- Add enforcement of JPEG extension for all images: obverse, reverse, obverse_flash and its cuts.
- Improve type 2/3 MRZ extraction in Passport (XX_Passports_YYYY): Reduction of CER 0.2%. Increase of global score 0.6%
- Improve type 2/3 MRZ extraction in Romania (RO_IDCard_2009): Reduction of CER 0.2%. Increase of global score 8%.
- Improve the image preprocessing on the Brazilian document (BR_IDCard_2014). It decreases the CER by 2%.
- Improve CER of "PD_Observations" node in Spain (ES_ResidencePermit_2020) by 14%.
- Improve reading of the nodes name and last name in Norway documents (NO_IDCard_2020, NO_DrivingLicense_1998, NO_DrivingLicense_2007, NO_DrivingLicense_2013).
- Improve NFC data reading in Spain (ES_IDCard_2021).
- Improve the process of no SDK image, allowing to process images with greater height than width (vertical images).

2.5. Fixed

- Fix classifier behavior when sending a null document type to assume a default ES document

- Fix birth date input format in Italy (IT_DrivingLicense_2000) in order to improves CER of that field by 1.5%
- Homogenize data validity scores in the following documents, improving by 1.5% the global score:
    - Poland: PL_DrivingLicense_1999, PL_DrivingLicense_2004, PL_IDCard_2001, PL_IDCard_2015, PL_IDCard_2019
    - Portugal: PT_DrivingLicense_1999, PT_DrivingLicense_2013, PT_IDCard_2015
    - Paraguay: PY_IDCard_2007, PY_IDCard_2009
    - Romania: RO_DrivingLicense_2013, RO_IDCard_2009
    - Serbia: RS_IDCard_2008Russia: RU_DrivingLicense_2011
    - Sweden: SE_DrivingLicense_2013, SE_DrivingLicense_2016, SE_IDCard_2012
    - Slovenia: SI_DrivingLicense_2009, SI_DrivingLicense_2013, SI_IDCard_1998
    - Slovakia: SK_DrivingLicense_2008, SK_DrivingLicense_2013, SK_IDCard_2015
    - Turkey: TR_IDCard_2016
    - Ukraine: UA_IDCard_2016
    - United States: US-MS_DrivingLicense_2017, US_IDCard-MilitaryRS_1993
    - Venezuela: VE_IDCard_2011
- Fix NFC-MRZ nationality and issuing country relation to return the ocr in three-letter format in Passport documents.
- Fix NFC name relations with VIZ and MRZ in Spain documents (ES_ResidencePermit_2020, ES_ResidencePermit_2011).
- Fix document classification pipeline when ES_ID is sent as documentType for any spanish ResidencePermit document.
- Fix MRZ reading to correctly read documents MRZ in Spanish documents(ES_ResidencePermit_2020).
- Fix IdentificationNumber extraction from MRZ to read it correctly regardless of the position in Spanish documents ES_ResidencePermit_2020.
- Fix ExpirationDate extraction on PDF417 BarCode in Argentina document (AR_IDCard_2009).
- Fix DocumentNumber checksum calculation in Polonia (PL_IDCard_2015, PT_IDCard_2015) and Belgium (BE_IDCard_2010).
- Fix the out node ""PD_Titul_Out"" by renaming it to ""PD_Title_Out"" in Czech Republic (CZ_IDCard_2014). IMPORTANT: The node ""PD_Titul_Out"" will be removed for 2021Q4.
- Fix node “PD_Name_UserName_Out” by renaming it to “PD_LastNameBirth_Out” in Macedonia (MC_IDCard_2019). IMPORTANT: the node PD_Name_UserName_Out will be deprecated in the 2021Q4.
- Fix node “DD_ExpeditionPlace_Code_Out” by renaming to “DD_ExpeditionPlaceCode_Out” in Paraguay (PY_IDCard_2007 and

PY_IDCard_2009) IMPORTANT: the node PD_Name_UserName_Out will be deprecated in the 2021Q4.

- Fix node “PD_LastName_Birth_Out” by renaming it to “PD_LastNameBirth_Out” in Slovakia (SK_IDCard_2015). IMPORTANT: the node PD_LastName_Birth_Out will be deprecated in the 2021Q4.
- Duplicate issuing country output node with the name DD_ExpeditionPlace_Out on the following documents:
    - Finland: FI_DrivingLicense_2010
    - France: FR_IDCard_1994
    - Ireland: IE_Passport_2015
    - Norway: NO_DL_1998, NO_DL_2007, NO_DL_2013
    - Passports: XX_Passport_YYYY.
- Fix PDF417 extraction in Canada (CA-BC_DrivingLicense_2013).
- Fix nationality conversion to 3 chars at the following documents: Norway (NO_DrivingLicense_1998, NO_DrivingLicense_2007, NO_DrivingLicense_2013), Slovenia (SI_IDCard_1998), German passport
- Fix generated global MRZ checksum in Colombia (CO_IDCard_2020).
- Fix MRZ scores and recurrences in Romania (RO_IDCard_2009), Czech Republic (CZ_IDCard_2003 , CZ_IDCard_2014), Finland (FI_IDCard_2011, FI_IDCard_2017), Liechtenstein (LI_IDCard_2009), Poland (PL_IDCard_2001), Portugal (PT_IDCard_2015), Serbia (RS_IDCard_2008) documents.
- Fix "PD_Org.Donation_FrontNoFlash" internal node by modifying the name with "PD_OrganDonation_FrontNoFlash" in Peru documents (PE_IDCard_2007).
- Add the node “OD_CAN_Out” in Polonia documents (PL_IDCard_2019). The node “DD_CANCode_Out” will be deprecated in the 20201Q4.
- Remove issuing country data validity information from boidas in Mexican documents.
- Fix classification subgroup in documents of type "HealthCard" (i.e. "IT_HC" for the Italy Health Card (IT_HealthCard_2004).
- Recover the output node “DD_ExpeditionPlace_Out” that had been renamed in favour of “DD_IssuingCountry_Out” in the following documents:
    - Finland: FI_DrivingLicense_2010
    - France: FR_IDCard_1994
    - Ireland: IE_Passport_2015
    - Norway: NO_DL_1998, NO_DL_2007, NO_DL_2013
    - Generic passports: XX_Passport_YYYY
- Fix nationality out node format in Ireland (IE_Passport_2015).
- Fix identification number extraction from MRZ in Colombia (CO_ResidencePermit_2016).
- Fix MRZ Global checksum in Poland (PL_IDCard_2019).
- Fix MRZ Document Number checksum in Slovak Republic (SK_IDCard_2015)
- Fix MRZ Global checksum in Paraguay (PY_IDCard_2007)
- Fix dates decoding in documents with format "ddMMMyyy" and "ddMMMMMyyyy" in Argentina (AR_IDCard_2009, AR_IDCard_2012), Brazil (BR_IDCard_2014), Dominican Republic (DO_IDCard_1998), Guatemala (GT_IDCard_2009), Italy

(IT_IDCard_2017), Malta (MT_IDCard_2002, MT_IDCard_2014), Netherlands (NL_IDCard_2011, NL_IDCard_2014), Norway (NO_IDCard_2020), Philippines (PH_IDCard-PO_2016), Sweden (SE_IDCard_2012), Australia (AU-ACT_DrivingLicense_2011, AU-NSW_DrivingLicense_2013, AU-QLD_DrivingLicense_2011, AU-QLD_DrivingLicense_2016, AU-TAS_DrivingLicense_2015, AU-VIC_DrivingLicense_2009, AU_WA_DrivingLicense_2011, AU-WA_DrivingLicense_2014), Canada (CA-AB_DrivingLicense_2009, CA-BC_DrivingLicense_2013, CA-SK_DrivingLicense_2016), Ireland (IE_Passport_2015), United States (US_IDCard-MilitaryRR_1993, US_IDCard-MilitaryRT_1993, US_ResidencePermit_2017), Hungary (HU_IDCard_2000)

Facial Biometry

2.6. Added and Improved

- Improved passive anti-spoofing performance.
    - For a threshold of 0.7 APCER is 46% lower with respect to the previous release. BPCER has no measurable differences.
    - For a threshold of 0.9 APCER is 57% lower with respect to the previous release. BPCER has no measurable differences.
- The average processing time of the selfie vs document face image comparison has improved 22,48% from the previous release, reducing the average time of the selfie processing step.

3. Main features

3.1 Document security features

vali-Das document validation response depends on two main factors.

- **ID Document**: Each ID document is different, it can be made with different techniques or materials and contains different security features and data. Countries tends to improve their ID documents according with the technology / security evolution.
- **Capture technology**: Veridas has capture SDKs for iOS, Android and HTML platforms. Depending on the capture technology, different sensors or capture features are available or not. For example NFC or Flash is not available in HTML. So the scope is influenced also by the capture technology used. The device used for capture also affects the document validation. HTML laptop built-in cameras usually have lower performance than an external one, or the camera of a mobile device.

The document analysis step of validas, which behind the scenes is performed by the Veridas' IDentidas service, performs the following security verifications.

1. **High Security verifications**
   - 1.1. **Data logic**. IDentidas verifies the logical consistency of the information printed on the document. This includes verification of check digits, data format, and logical relationships between different fields. It is represented through the ScoreGroup-DataValidity score. In addition, IDentidas verifies that the document has not yet expired through the ScoreGroup-ValidExpirationDate score and that the owner is of legal age through the ScoreGroup-FullAge.
   - 1.2. **MRZ Checksum.** IDentidas reads and verifies the MRZ check digits of the identity document. It is represented through the ScoreGroup-MRZDecoding score.
   - 1.3. **VIZ vs MRZ consistency.** IDentidas verifies the degree of similarity or consistency of the data written in the document (VIZ) against the data printed in the MRZ. It is represented through the ScoreGroup-VIZ-MRZ-DataRecurrence score.
   - 1.4. **B&W photocopies detection.** IDentidas detects the presence of photocopies of black and white documents. It is represented through the ScoreGroup-ColorAuthenticity score.

2. **Advanced Security verifications**
   - 2.1. **Coloured photocopies detection.** IDentidas detects the presence of coloured photocopies of documents. It is represented through the ScoreGroup-MaterialAuthenticity and/or ScoreGroup-PrintAttackTest score.
   - 2.2. **Photo to screen (replay) detection.** IDentidas detects the presence of documents displayed on a screen (for example, on a computer or mobile device). It is represented through the ScoreGroup-ReplayAttackTest score.
   - 2.3. **Photo replacement.** IDentidas detects the impersonation or modification of the printed photo in the document. It is represented through the ScoreGroup-PhotoAuthenticity score.
   - 2.4. **Bidi code data consistency.** IDentidas performs the reading of two-dimensional codes printed on the document (QR, PDF417, Code 128 or Code 39) and verifies the consistency of the content against the information printed on the document. It is represented through the ScoreGroup-BarcodesDecoding.
   - 2.5. **Broken document detection**. IDentidas detects when a document is broken. It is represented through the ScoreGroup-DamagedDocumentTest.

3. **Max Security verifications.**
   - 3.1. **MRZ vs NFC consistency**. The comparison between the data printed on the document and the information stored on the chip allows the highest level of security to be achieved. IDentidas compares the content written in the document and the content stored in the document's NFC chip to verify its consistency. It is represented through the Score Group-MRZ-NFC-DataRecurrence score.

3.2. **Photo replacement with NFC.** In addition, IDentidas uses facial biometrics to compare the photo printed on the document with the photo stored on the chip. In this way, the ScoreGroup-PhotoAuthenticity score presented above obtains the highest possible accuracy.

All these checks generate a global document validation score. It is represented through the Score-DocumentGlobal score (SG). The influence on the calculation of the global score of each of the scores presented is detailed below. They all take a value between 0 and 1. The higher the value of the score, the greater the confidence that it represents an authentic document.

Score	Behaviour	Default influence on the SG calculation	Influence on SG when the score is activated		Ability to change default behavior through API
			Condition score	SG value	
ScoreGroup-Valid ExpirationDate	It takes the value 1 if the document is valid. It takes the value 0 if the document is expired.	Yes	0.0	0.0	Yes
ScoreGroup-Full Age	It takes the value 1 if the document belongs to a person of legal age. It takes the value 0 otherwise.	Yes	0.0	0.0	Yes
ScoreGroup-Data Validity	It takes a value between 0 and 1 calculated from checking the consistency of all the data printed on the document.	Yes	The higher its value, the higher the value of SG.		No
ScoreGroup-MRZ Decoding	It takes a value between 0 and 1 calculated from all the checksums of the MRZ.	Yes	The higher its value, the higher the value of SG.		Yes
ScoreGroup-VIZ-MRZ-DataRecurrence	It takes a value between 0 and 1 calculated from checking the consistency of all data	Yes	The higher its value, the higher the value of SG.		No

	printed in duplicate on the document.				
ScoreGroup-ColorAuthenticity	It takes the value 1 if the image represents a document with color. It takes the value 0 if the document is a black and white photocopy.	Yes	0.0	< 0.7	Yes

Score	Behaviour	Default influence on the SG calculation	Influence on SG when the score is activated		Ability to change default behavior
			Condition score	SG value	
ScoreGroup-MaterialAuthenticity	It takes a value between 0 and 1 calculated from the analysis of a photograph without flash and one with flash on the obverse. The lower the value, the higher the probability that the document is a photocopy.	Yes	< 0.5	< 0.7	Yes
ScoreGroup-PrintAttackTest	It takes a value between 0 and 1. The lower the value, the higher the probability that the document is a photocopy.	No	< 0.5	< 0.7	Yes
ScoreGroup-ReplayAttackTest	It takes a value between 0 and 1. The lower the value, the higher the probability that the document is a photo to a screen.	No (Except ES_IDCard_2006, ES_IDCard_2015, MX_IDCard_2008, MX_IDCard_2013, and MX_IDCard_2014)	< 0.5	< 0.7	Yes

ScoreGroup-PhotoAuthenticity	It takes a value between 0 and 1. The lower the value, the higher the probability that the printed photo is manipulated.	No(Except ES_IDCard_2006, MX_IDCard_2013, and MX_IDCard_2014)	< 0.5	< 0.7	Yes
ScoreGroup-MRZ-NFC-DataRecurrence	It takes a value between 0 and 1 calculated from the consistency check of all data printed on the document and stored on the NFC chip.	Yes	< 0.5	< 0.7	No
ScoreGroup-DamagedDocumentTest	It takes a value between 0 and 1. The lower the value, the higher the probability that the document is damaged (for example, broken)	No	< 0.5	< 0.7	Yes
ScoreGroup-BarcodesDecoding	It takes a value between 0 and 1. The higher the value, the higher the consistency of the content against the information printed on the document.	Yes	< 1.0	< 0.7	Yes

Not all documents analyse all the security measures described above. More information about the scores and the ocr nodes retrieved by IDentidas can be found in the document named *"Document validation user guide Identidas"*.

3.2. Biometric Security Features

The following scores are generated and provided by vali-Das after the selfie photo and video analyses have been successfully performed.

ValidasScoreSelfie: This is the main score for selfie photo vs ID document face image similarity analysis which compares them and offers a score that indicates the probability for both faces of belonging to the same person. The similarity is given in a float number format

that has a value from 0 to 1, being 0 the lowest similarity probability and 1 the highest. If the NFC face photo has been uploaded to vali-Das, the value of ValidasScoreSelfie is equal to the value of ValidasScoreNfcSelfie, if not, it will be the same as ValidasScorePhotoId.

ValidasScorePhotoId: Indicates the probability for the selfie photo and the ID document face image of belonging to the same person.

ValidasScoreVideo: Indicates the probability for the selfie photo and the face that appears on the selfie video of belonging to the same person.

ValidasScoreLifeProof: Indicates the probability for the person be alive.

ValidasScoreSelfieAuthenticity: Indicates the probability for the selfie photo image to be authentic and not a spoofed one.

ValidasScoreNfcSelfie: Indicates the probability for the selfie image and the NFC chip face image belonging to the same person.

ValidasScoreDuplicateAttack: Indicates the probability for the ID document face image and the selfie image to be different images.

3.3. vali-Das Integrity scores

The following scores are generated and provided by vali-Das for each one of the uploaded images once their integrity check has been performed. What these scores provide is a guarantee that the images captured by the client SDK have been received by the vali-Das backend application without suffering any modifications along the way. This integrity check feature requires using SDKs release 2020Q4 or newer, otherwise, the integrity scores will not be available.

Please check the SDK documentation for the compatibility for the validation process integrity verification feature

3.3.1. Main Integrity Score

ValidasScoreIntegrity: Indicates if the integrity of the entire validation process has been satisfied or not. Its value depends on the following factors:

1) This validation integrity score will be available ONLY if at least one of the images was captured using the SDK supporting this integrity feature
2) This validation integrity score will be 1 if ALL the uploaded images have their integrity score with value 1

3) This validation integrity score will be 0 if any of the images have an integrity score of 0 or missing (ie: was not captured using the SDK supporting the feature)

3.3.2. Other Integrity Scores

ValidasScoreDocObverseIntegrity: Indicates whether the obverse image has not been modified or altered since it was captured by the Veridas SDK. If there is a fulfilment, value “1” is provided, otherwise, value “0” is provided.

ValidasScoreDocObverseFlashIntegrity: Indicates whether the obverse with flash image has not been modified or altered since it was captured by the Veridas SDK. If there is a fulfilment, value “1” is provided, otherwise, value “0” is provided.

ValidasScoreDocReverseIntegrity: Indicates whether the reverse image has not been modified or altered since it was captured by the Veridas SDK. If there is a fulfilment, value “1” is provided, otherwise, value “0” is provided.

ValidasScoreDocSelfieIntegrity: Indicates whether the selfie image has not been modified or altered since it was captured by the Veridas SDK. If there is a fulfilment, value “1” is provided, otherwise, value “0” is provided.

ValidasScoreDocSelfieAliveIntegrity: Indicates whether the selfie alive image has not been modified or altered since it was captured by the Veridas SDK. If there is a fulfilment, value “1” is provided, otherwise, value “0” is provided.

3.4. vali-Das Global Scores

vali-Das currently returns a number of global or main scores which summarize the results of each one of the main analyse processes like the document and the proof of life, among others. Based on these main scores, vali-Das generates a new score named **ValidationGlobalScore** to represent the result of the entire validation process.

These main scores have a floating point value between 0 and 1, and roughly, they tell whether a whole process was successful or not. These scores are useful because, if they didn't exist, a client would have to walk over a growing number of scores to tell if the process went well.

These global or main scores are the following.

- Score-DocumentGlobal: Informs about the degree of success in all the document verification steps.
- ValidasScoreSelfie: Indicates the similarity between the selfie photo and the document face.
- ValidasScoreVideo:Indicates the similarity between the person in the selfie video and the person in the selfie photo.

- ValidasScoreLifeProof: tells whether the life proof test went OK.
- ValidasScoreIntegrity: tells whether the integrity of all pictures was successfully verified.

These score values can be considered as:

- Valid: It means that the value is high enough to take it as good
- Inconclusive: It means that the evidences should be reviewed by a human in order to determine if they are good or not.
- Rejected: It means that the value is low enough to be considered as incorrect, fraud or not good.

The following table shows the ranges a score's value needs to be in for it to be considered valid, inconclusive or rejected.

Main scores	Valid	Inconclusive	Rejected
Score-DocumentGlobal	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreSelfie	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreVideo	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreLifeProof	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreIntegrity	1	n/a (doesn't appear)	0

The new score **ValidationGlobalScore** will have one of the following three values, depending on which of the following conditions:

Condition	Value of ValidationGlobalScore
The scores *ValidasScoreSelfie*, *ValidasScoreLifeProof*, *ValidasScoreVideo*, *ValidasScoreIntegrity* and *Score-DocumentGlobal* are all valid.	1.0
From the above scores, one and only one is in an inconclusive state.	0.5
Either: - At least one of the above scores is in rejected state, or - More than one of the above scores is in inconclusive state.	0.0

3.5. Recommended scores

In the next section are described some recommendations for the validation process.

3.5.1. Validation with Selfie Alive or Selfie Alive Pro

This process consists of a validation with an identity document and liveness-test by means of Selfie Alive or Selfie Alive Pro.

Main scores	Validate	Inconclusive	Reject
Score-DocumentGlobal	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreSelfie	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreLifeProof	> 0.70	0.50 <= score <= 0.70	< 0.50

You can also follow these recommendations when using a video-identification process in combination with Selfie Alive or Selfie Alive Pro.

3.5.2. Validation with Video

This process consists of a validation with an identity document, facial verification and video capture for compliance with regulatory requirements (e.g. SEPBLAC in Spain or CNBV in Mexico). The captured video is usually reviewed by a back-office agent.

Main scores	Validate	Inconclusive	Reject
Score-DocumentGlobal	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreSelfie	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreVideo	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreLifeProof	> 0.50	0.0 <= score <= 0.50	-

3.5.3. Validation without liveness-test

This process consists of a validation with an identity document and facial verification without liveness-test. Usually this use case is associated with face-to-face cases in which the person who wants to verify his identity performs the process in the physical presence of an agent.

Main scores	Validate	Inconclusive	Reject
Score-DocumentGlobal	> 0.70	0.50 <= score <= 0.70	< 0.50
ValidasScoreSelfie	> 0.70	0.50 <= score <= 0.70	< 0.50

4. Validation Flow

4.1. Validation Process Service Modes

The system allows to choose between three modes of operation called service modes.

The client (or the calling application) can choose which service mode to use **per request** by including the parameter "serviceMode" with values "ocr", "validation" or "validation_with_flash". If this parameter isn't present, the "validation_with_flash" service mode will be used for that ID document.

- The "**ocr**" mode is meant to be used in applications that only require to read and extract the information contained in the ID document (OCR and NFC). This service mode requires to upload an image of the document's obverse and also allows to upload an image of the reverse (except the passport, that only accepts an obverse image) which is optional and in case of being sent, strengthens the OCR process. This mode could be used when the photos of the ID document are taken using Veridas Document Capture SDKs (iOS, Android or HTML). In addition, this mode could be used with photos not taken by Veridas Document Capture SDKs.

- The "**validation**" mode extracts the OCR of the ID document and analyzes the security measures present in the ID document. This mode could be used when the photos of the ID document are taken using Veridas Document Capture SDKs (iOS, Android or HTML). In addition, this mode could be used with photos not taken by Veridas Document Capture SDKs.

- The "**validation_with_flash**" mode extracts the OCR of the ID document and analyzes the security measures present in the ID document as the "validation" mode. This mode also performs the analysis of a photo of the document's obverse taken with flash, which must be sent to the system. This photo is used to verify the document's authenticity in a deeper way by checking security features that are revealed by the flash (**technology patented by Veridas**). This mode requires the use of Veridas native Document Capture SDKs (iOS, Android).

Each one of these service modes has specific usage and billing conditions which can be requested to Veridas

Service mode	**“ocr”**	**“validation”**	**“validation_with_flash”**
SDK iOS Document Capture	X	X	X
SDK Android Document Capture	X	X	X
SDK HTML Document Capture	X	X	
Without Veridas SDK	X (under certain conditions)	X (under certain conditions)	

4.2. Validation Process Init

The onboarding process flow performed by vali-Das can be initiated in two possible ways:

1) Initializing the validation object by doing a `POST /validation` call and then uploading each document image using `PUT /document` endpoint, or

2) Initializing the validation object and uploading one or more document images by using a single `POST /validation/document` call (introduced in release 2020Q3)

4.2.1. Validation initialization

This is done by sending a *POST /validation* request and the result is the creation of a new validation object by vali-Das returning to the user its Id.

Once the Id has been returned, the validation process can be continued by following the section 4.3.

It is highly recommended to make this request once (and not before) the document obverse image was captured and is ready to be sent to vali-Das, that is, the PUT document should be sent right after the POST validation. Otherwise, if there was any issue after the POST validation, and therefore the PUT document never took place, it would result in empty validations that could have an impact on performance.

4.2.2. Validation initialization + document images upload

This is the recommended way of initiating a validation process. By doing this way, the first request to vali-Das is a POST /validation/document. It is mandatory to send the document obverse photo alongside this request, while the document obverse with flash and the reverse photos are optional. This request initializes the validation object and analyzes the provided images, returning the validation Id to the user in case that the analysis process goes well and an error otherwise.

In this request, the user has to specify the document's type or work with the IDentidas classification engine, as detailed in section 4.3.3. Also it is possible to activate or deactivate some score modifiers that act on the document global score modifying it, as detailed in section 4.3.4.

If all the document images (obverse, obverse with flash and reverse) are uploaded, the order of the vali-Das processing is: obverse, reverse and obverse with flash. If one of the image analysis processes is not successfully done, the rest of the images are not analyzed and an error is returned.

If not all the document images are uploaded alongside this request, the rest of the images shall be uploaded as it is indicated in the section 4.3. However, if all the images have been uploaded, the validation process can be continued by following the section 4.4 or 4.5, depending if NFC data upload is wanted or not.

For more detailed information regarding the document images analysis step, please refer to sections 4.3.2 and 4.3.3 and 4.3.4.

4.3. Single Document Image Validation

As explained above, the validation process can be started by two different ways, just initializing the validation object and also uploading one or more document images. The current step also differs depending on the starting way.

4.3.1. Started with Validation Initialization

After initiating the validation, the client shall upload the document's obverse image (without flash) by doing a *PUT /validation/{id}/document* request by setting the *analysisType* to *obverse*. The rest of the images (obverse with flash and reverse) are not mandatory to satisfactorily finalize the validation.

4.3.2. Started with Document Images upload

If the POST /validation/document request was used to initiate the validation process and not all the wanted document images were uploaded to vali-Das, the rest of the images shall be uploaded by using this PUT /validation/{id}/document request.

4.3.3. Document obverse upload

In the request in which the document obverse photo is sent, the user has to specify the document's type, being possible to add exactly the document type (i.e. DE_IDCard_2010) or work with the IDentidas classification engine, among: all the document in this country (i.e. DE) or specifying among the country and the license type. (i.e. DE_ID, DE_DL). Is important to remark that if the document type or the type of license is known, it is better to specify it.

In the next table is shown an example of the identifiers available for the german documents, depending on the country and the license type.

Germany

- DE_DrivingLicense_2004
- DE_DrivingLicense_2013
- DE_IDCard_2007
- DE_IDCard_2010

	GROUP_ID		
DOCUMENTS	DE	DE_ID	DE_DL
DE_DrivingLicense_2004	X		X
DE_DrivingLicense_2013	X		X
DE_IDCard_2007	X	X	
DE_IDCard_2010	X	X	

If the specific type of the document is not indicated but the country or the country plus the main group which the document belongs to (ID, DL etc.), vali-Das will try to guess or "classify" it and determine which is the exact document type. However, it is more suitable to provide the system with the exact information about the document type. If the service cannot identify the document type and the user has not specified it, an error will be returned. Otherwise, the service will proceed to analyse the document.

4.3.4. Common Document analysis Step Information

The ID document validation process requires at least to process a photo of the obverse of the document to be finalised by doing the confirmation step. However, most document types require an image of the reverse and the obverse with flash to complete the analysis. These images can be uploaded after the initial request by using this same endpoint and the required parameter configuration allowing to strengthen the document security analysis process and also to improve the extracted OCR data. Depending on if we want to do the document analysis by using the obverse plus the obverse with flash plus the reverse images,

or just the obverse plus the reverse, or just the obverse, the *serviceMode* parameter has to be configured in a different way as is explained in the API specification section

In addition, it is possible to activate or deactivate some score modifiers that act on the document global score modifying it, by sending their names in the PUT /document request (section "API: Upload a new document"). The documents that allow this configuration and its corresponding modifiers are listed in section "Apendixes: Documents and modifiers list to send in scoresConfiguration"

The accuracy of the analysis process also depends on the quality of the images sent to vali-Das, which requires to comply with minimum requirements to work properly. This compliance as well as other advantages can be obtained by using the SDK provided by Veridas.

A document analysis request which has returned a 4XY or 2XY HTTP status code, can be done again if desired. Just in case of receiving a 5XY HTTP status code, the process must be started again from the POST /validation. In the particular case of a retry for the obverse document image analysis, even the request body parameters like the *serviceMode* can be changed. Also note that if the same image is re-uploaded, the same results are get, so the system is deterministic.

The analysis of the I.D. document obverse image is the minimum step required for vali-Das to do the confirmation step.

4.4. NFC data upload

Optionally, and just by using documents like the ES_IDCard_2015 and XX_Passport_YYYY, which include an NFC chip, and also using an Android NFC-compatible device, the ID document information contained in that chip can be uploaded by using the PUT /validation/{id}/nfc endpoint. The proper way for obtaining and sending this NFC data to vali-Das is by using the SDK provided by Veridas.

When vali-Das receives the NFC data, it is merged with the information extracted using OCR techniques, and is also prioritized over the OCR data.

4.5. Face Biometry analysis

Once the document analysis is done, the face biometry validation processes can be started.

The biometry analysis is an optional step and comprises two processes, selfie photo verification and selfie video verification. Both of them can be done isolated (just the selfie photo analysis or just the video selfie analysis) or together, by sending the selfie photo and after that the video selfie, which generates additional similarity values.

In the selfie photo biometry analysis, vali-Das does many analysis processes. The main one compares the selfie photo that the user has taken at the moment, with the face photo printed in the I.D. document, or with the one retrieved from the NFC chip (if this has been previously sent).
This process requires the user to take a selfie photo with good enough quality and to send it to vali-Das by using the PUT /validation/{id}/selfie endpoint. This photo capture can be properly done with the SDK provided by Veridas.

If the selfie anti-spoofing feature is available, another verification can be ordered to be done, corresponding to the selfie photo spoofing detection. To do this, the *antispoofing* parameter has to be sent, indicating that this type of analysis is desired.

This feature -selfie antispoofing- is disabled by default and has specific billing conditions, so it has to be enabled by Veridas upon explicit request from the customer

Alongside the selfie image, a photo of the user smiling can also be uploaded, initiating an analysis process called “alive selfie analysis”. This provides the proof of life functionality without the necessity of sending a selfie video.

This feature -selfie alive- is disabled by default and has specific billing conditions, so it has to be enabled by Veridas upon explicit request from the customer

The other step of the face biometry analysis process requires the user to record a video selfie -unless the selfie alive image has been already provided-. Then, vali-Das performs a series of biometric checks and analyses. These analyses depend whether the user has previously uploaded a selfie photo or not.

If this selfie photo has been uploaded, a comparison between the person on the selfie and the one on the video which verifies that both are the same.

If the selfie photo has not been uploaded, a video frame will be used as the selfie photo, and the corresponding comparisons are performed. The most optimal video frame is automatically selected by the cloud engine for face processing.

Finally, a video proof of life analysis is done, generating another score.

Using Veridas SDKs is highly recommended to achieve optimum performance and accurate results when performing biometry analysis.

4.5.1. Face biometry process with Selfie Alive Pro

This use-case is based on a challenge-response design. vali-Das will generate a challenge that should be reproduced using VERIDAS SDKs. Then, the captured evidences will be sent to vali-Das for its final analysis.

Selfie-Alive Pro functionality is a form of face liveness detection implemented following a challenge-response schema.

- In a first stage, the client must operate a request POST /validation/{id}/challenges/generation to generate a new challenge token. The response of this request is a JWS string with application/jose mime type.
- In a second stage, the client needs to record an interaction with a user face, following the indications of the challenge. This second stage is implemented completely by Veridas SDKs.
- In a third stage, the client must request POST /validation/{id}/challenges/video-photo with all the evidences returned by the SDK (among them, a video recording of the face).

The system will reply with a confidence metric in range [0.0, 1.0] in the **ValidasScoreLifeProof** score, calibrated as indicated in the curve of Selfie-Alive Pro in the "das-Face Performance Report" section 6.3.

Notice that Selfie-Alive Pro is optional and may require a specific agreement.

4.6. Data retrieval

Once all the required I.D. document images, and optionally the face biometry images, have been uploaded and analysed correctly, the vali-Das user can proceed to retrieve the extracted I.D. document OCR data and the validation scores, which contains the information about the I.D. document and biometric verification. This can be accomplished by sending a GET /validation/{id}/ocr and GET /validation/{id}/scores requests.

The user can also retrieve the image cuts obtained from the I.D. document images, by using the dedicated endpoints (GET /validation/{id}/document/image/{image_type}). These cuts include -but are not limited to- the face of the person contained in the I.D. document, the signature or the person contained in the I.D. document, and the I.D. document images itself among others, depending on the document type and the chosen analysis process.

At any point of the validation, the entire validation data up to that moment may be retrieved by doing a GET /validation/{id} request.

4.7 Validation data timestamping

Once all the validation steps have been carried out, there is the possibility to timestamp the data used on the validation process and the results obtained. The purpose of this, is to provide a mean to verify the integrity of the process and ensure that the data of a validation process corresponds to a specific validation, time after the process has been carried out.

To do this timestamping process, the endpoint `PUT /validation/{id}/timestamp` has to be called, indicating the Timestamp Authority (TSA) which wants to be used to do the process, or let the default option to be used. The non default options are “fnmt”, which uses the timestamping service of the Spanish entity FNMT (Fábrica Nacional de Moneda y Timbre), and “izenpe” which uses the service of the Vasque Government Certification Authority.

The API user has the option to timestamp the process data at any time during the validation process by calling this endpoint. However, we recommend doing it at the end of the process, just before confirming or canceling the validation. At that moment, all the evidences and results are present, so the timestamp is more useful.

If the user requests to timestamp more than once in the same validation process, only the last one will be saved because we consider that this will be the most complete, but both of them will be charged.

It may happen that the timestamp service fails for some reason beyond our control. If the chosen Authority is not the standard, and fails, vali-Das will retry to timestamp with this standard service instead.

After the timestamp process, the user can obtain a zip that includes two components: a zip with the data and results available at the time of the timestamp request, and another zip with timestamp request and response files sent to the TSA service.

4.7. Confirmation or cancellation

As a final step, the on-course validation process should be “closed” or finalized by sending a PUT /validation/{id}/confirmation or PUT /validation/{id}/cancellation cancel request.

The confirmation of a validation is done by sending a confirmation request using the PUT /validation/{id}/confirmation. This makes the current validation state to be changed from “on course” to “confirmed”. Optionally, this same endpoint allows sending the OCR data which has been previously retrieved corrected by the API client. This corrected OCR data can include all the fields with their correct values, or just the ones that need to be corrected (updated). If no OCR data is re-sent, it is considered that the data is correct.

Another way for properly finalizing a validation process is by calling the cancellation endpoint. This request sets the validation to “cancelled” state, and has to be used when the validation process does not want to be continued or completed because of an error has happened, the validation is not useful, an unwanted image has been sent to the system or the validation wants to be started from the beginning.

4.8. Deletion

Finally, after cancelling or confirming and retrieving all the validation data, the validation should be deleted to prevent data to remain unnecessarily stored on the vali-Das database.

It is important to mention that vali-Das is designed to strictly follow the flow described before, and therefore, ideally, none of the calls should be reissued or duplicated during the course of a validation. If an error occurs or a certain analysis wants to be repeated, the validation on course should be cancelled and a new one started. Repeating a certain analysis or calling twice a method could lead to a malfunctioning of the process for the “on-course” validation.

An entire sequence diagram with the more common flows is included in the Annex 5

The personal data is not stored in the cloud once the process has ended. Veridas has undertaken special efforts to guarantee that the personal data collected remains in the solution only during the minimum period needed to process it. A third party has verified that once the personal data is processed, the solution makes it available to the client, who deletes it, or is automatically deleted in an effective manner after a short period of time, without leaving any data in the system. The recurrence of this automatic clean-up process is agreed between the client and Veridas, establishing Veridas that the recurrence period could be reduced if it is considered to be inadequate.

5. API Considerations

The following are some general considerations about this API that must be taken into account before consuming the service.

5.1 Compatibility

This service exposes a RESTful API designed to be **backwards-compatible** (whenever possible). An API is said to be *backwards-compatible* if a client written against a previous version of the API will keep working against future ones.

The following changes are considered *backwards compatible*:

- Adding new resources (on new URIs)
- Adding new optional request form fields or JSON properties
- Adding new optional query parameters
- Adding new JSON properties to existing API responses
- Changing the order of JSON properties on existing API responses
- Changing the order of items on JSON object or array properties (unless the documentation states they are ordered)
- Adding new optional headers in requests
- Adding new headers in responses

The following changes are considered *backwards incompatible (breaking changes)*:

- Removing API resources
- Renaming API resources (changing URIs)
- Adding new required request form fields, JSON properties, query parameters or headers
- Making any existing optional request form fields, JSON properties, query parameters or headers required
- Removing existing request form fields, JSON properties, query parameters or headers
- Changing the meaning of existing request form fields, JSON properties, query parameters or headers
- Adding new request form fields, JSON properties, query parameters or headers that alter the meaning of existing ones
- Changing the type of existing request form fields or JSON properties (from string to number for example)
- Changing the format or maximum length of existing opaque string properties with documented conflicting constraints

Backwards incompatible (breaking) changes may be introduced by bumping the API version, as explained on the 5.4 Versioning section. In this scenario, previous versions of the API may be marked as deprecated and stop receiving new features. Should this happen, these old versions will be available for some agreed period of time, until they are eventually removed.

Veridas will announce in advance this deprecation and removal process (also called *sunsetting*) to ensure that users have enough time to migrate to the newest version of the API without causing any downtime or service disruptions.

5.2. Authentication

This service sits behind a gateway responsible for authenticating end users and routing requests. The authentication method is API key based.

5.3. Requests

- The `multipart/form-data` content type must be used on every request.
- The image files sent to vali-Das must have a format extension (.jpg, .png). Many other formats may work fine, but there is not proper working guarantee nor support for them.
- The video files sent to vali-Das must have a format extension (.mp4, .webm). Many other formats may work fine, but there is not proper working guarantee nor support for them.
- The API is HTTP-based and uses SSL everywhere with valid certificates. For security reasons, customers should never trust VeriSaaS endpoints exposing invalid certificates
- Endpoints attempt to conform to the design principles of Representational State Transfer (REST).
- The service includes an `/alive` endpoint that returns the 204 HTTP status code if the service is up and running. This can be used to check the service's health.
- Each request is uniquely identified, which might be helpful to trace support cases. This unique id is returned in the `x-request-id` header. The format of the unique id is a UUID in its hexadecimal form.

In general, API responses are encoded using JSON, regardless of the accepted content-type specified by the client. Also, certain responses like the ones regarding the files (images, videos, etc.) retrieval, are just the binary of the file itself. Responses will return a suitable HTTP status code indicating if the request was successful (200, 201 or 204 if nothing else is returned) or not (any other code). Responses will also include a code field in the JSON body that can provide more information about the concrete error on each case.

In general, successful responses will have the following format:

HTTP Status: 200 OK

```
{
	“data”: {
		DATA
	}
}
```

or

HTTP Status: 204 NO CONTENT

where:

Field	Required	Description

data	no	Message payload. It will contain an arbitrary JSON content defined by each endpoint.

In case of error:

Field	**Required**	**Description**
code	yes	Error code
message	no	A message indicating what went wrong
errors	no	A list of errors just in case. This is a list containing the fields “field”, “code” and “message”. “field” is optional.

Example:

```
{
	“code”: “UnknownDocumentTypeError”,
	“message”: “Unknown document type: Please make sure you are uploading a supported document or using a known document type.”
}
```

5.4 Versioning

The API version will be included in the URL, after the base url and before the endpoint:

`https://<base_url>/<service>/`**`v{number:integer}`**`/<endpoint>`

Non-backwards compatible changes will cause a version increment. As of now, the API only supports the **v1** version.

6. API Definition

This service is a REST API that revolves around managing the “validation” resource and it’s subresources, “document”, “selfie”, “video”, “nfc”. The following endpoints are exposed:

Public Base URL (v1):

`https://<base_url>/validas/v1/`

Resources:

Method	Public URL	Description
GET	`/alive`	Checks if the service is up
POST	`/validation`	Creates a new validation and returns the validation id
POST	`/validation/document`	Uploads the obverse document image and optionally the reverse and the obverse with flas, analyses them and returns the validation id of the newly created validation.
PUT	`/validation/{id}/contextual_data`	Uploads validation contextual data
PUT	`/validation/{id}/document`	Uploads an ID document image and analyses it.
GET	`/validation/{id}/nfc_keys_pins`	Obtains the NFC chip keys and pins
PUT	`/validation/{id}/nfc`	Uploads data extracted from the NFC chip
PUT	`/validation/{id}/selfie`	Uploads and analyses the selfie
PUT	`/validation/{id}/challenges/generation`	Creates a new challenge token
PUT	`/validation/{id}/challenges/video-photo`	Uploads a selfie and a video challenge and analyses them
PUT	`/validation/{id}/video`	Uploads and analyses the video
PUT	`/validation/{id}/timestamp`	Timestamp all validation evidences
GET	`/validation/{id}/timestamp`	Gets the timestamp data associated to a validation

GET	/validation/{id}/ocr	Gets validation OCR data extracted from the ID document and optionally from the NFC data
GET	/validation/{id}/scores	Gets the validation scores
GET	/validation/{id}	Gets a validation
PUT	/validation/{id}/confirmation	Confirms a validation (changes the validation state to confirmed)
PUT	/validation/{id}/cancellation	Cancels a validation (changes the validation state to cancelled)
DELETE	/validation/{id}	Deletes a validation
GET	/available-types	Get detailed information of the whole list of documents available for analysis
GET	/available-tsa	Get detailed information of the whole list of available timestamp authorities
GET	/document/ocr/field-description	Gets the description of the document nodes
GET	/validation/{id}/document/image/{image_type}	Gets the images of the document associated with the validation. Image types are: obverse, obserse/cut, reverse, reverse/cut, obverse-flash, obverse-flash/cut, nfc/face, face, signature and fingerprint
GET	/validation/{id}/selfie	Gets the selfie associated to a validation
GET	/validation/{id}/selfie-alive	Gets the selfie alive associated to a validation
GET	/validation/{id}/video	Gets the video associated to a validation
GET	/validation/{id}/challenges/video	Gets the video challenge associated to a validation
GET	/validation/{id}/challenges/annotations	Gets the video challenge annotations associated to a validation
GET	/document_types [DEPRECATED]	Get the list of document types currently under the scope of the auto classification engine

6.1. Check if the service is alive

`GET /alive`

Response

HTTP Status: 204 NO CONTENT

6.2. Create a new validation

Creates a new validation. Returns the newly created validation id.

> It is highly recommended to make this request once (and not before) the document obverse image was captured and is ready to be sent to vali-Das, that is, the PUT document should be sent right after the POST validation. Otherwise, if there was any issue after the POST validation, and therefore the PUT document never took place, it would result in empty validations that could have an impact on performance.

`POST /validation`

Response

HTTP Status: 201 CREATED

Returns the validation id (randomly generated).

```
{
	“data”:{
		“id”: “VALIDATION_ID”
	}
}
```

Note: Validations may exist for a given period of time and then deleted to avoid having a huge amount of database records and/or images stored on disk. The client will get a 404 error when trying to access a non-existent validation.

Example

```
{
	“code”: “NotFoundValidation”
	“message”: “Resource has not been found”,
}
```

6.3. Create a new validation and upload documents

Creates a new validation sending a document obverse photo and, optionally, a document obverse with flash and a reverse.. Returns the newly created validation id.

`POST /validation/document`

Request

Name	Required	Type	Description
`obverse`	yes	file	Document image as binary.
`reverse`	no	file	Document image as binary
`obverseFlash`	no	file	Document image as binary
`documentType`	yes* ** If no documentType is specified, the system will try to classify it between the supported spanish documents*	string	The type of the document, the document's country or the document's country plus the document group kind.
`serviceMode`	no	string	The working mode which has to do with the available methods/ endpoints. The available values are: "ocr", "validation" and "validation_with_flash". When this parameter is not set, vali-Das will work in "validation_with_flash" mode.
`supportsNfc`	no	boolean	Indicates if the user's device supports NFC.
`scoresConfiguration`	no	json	Applies modifiers to the calculation of scores (ie: set the minimum age in years or amount of days after the document expiration date allowed to take the document as valid)

serviceMode

This parameter takes the following values:

- ocr: Working mode which allows to obtain the text data contained in the ID document by using OCR techniques but not the document validation scores.

- validation: Working mode used when a document validation is wanted to be done -so the validation scores are generated- but without using a document photo taken with flash. With this mode also the OCR data is generated.
- validation_with_flash: Working mode used when a document validation is wanted to be done using a document photo taken with flash. This is the default mode which is set when the parameter is not sent in the request (only when this mode is available). With this mode also the OCR data is generated.

Each one of these service modes has specific usage and billing conditions which can be requested to Veridas

documentType

This parameter allows the vali-Das service to provide information regarding the type of the I.D. document which is in the image(s) that is being sent in the POST /document request. It can take one value among the following ones:

- The document type itself
- The country which the document belongs to (ES, MX, AT, etc..)
- The country which the document belongs to plus the documents group which it belongs to (I.D. cards, Driving Licenses, etc.). The way of doing that is setting the value to XX_ID or XX_DL, being XX the country code, ID if the document belongs to ID cards and DL if it belongs to Driving Licenses.

The different possibilities allowed for the values of this parameter are specified in the document named “Document validation user guide Identidas 1.17”.

scoresConfiguration

This parameter is a json which allows to configure:

- The minimum age (years)
- The days after the document expiration date allowed to take the document as valid
- The status of some modifiers (See appendix 7.4 for the list of modifiers available for each document type)

In the case of the minimum age (years) or The days after the document expiration date allowed to take the document as valid.

```
{"minimumAcceptableAge" :15, "maximumAcceptableTimeSinceExpiration": 30}
```

vali-Das API supports sending just one of these parameters related to age and time elapsed, or sending both of them together. If no configuration is sent, the default one is applied, which corresponds to:

- The age of majority of the document country, which usually is 18 (years) for minimumAcceptableAge. The valid range is [0, 100].
- 0 (days) for maximumAcceptableTimeSinceExpiration. The valid range is [0, 36500].

For each one of the two fields passed to the POST /document, “minimumAcceptableAge” and “maximumTimeElapsedSinceExpiration”, a new score is created. The names for these scores are `ScoreVal-PD_AcceptableAge-Value` and `ScoreVal-DD_AcceptableExpirationDate-Value` respectively.

To change the status of some modifiers, the field “modifiers” needs to be included in the scoresConfiguration json. I.e.:

```
{
	"minimumAcceptableAge": 14,
	"modifiers":{
		"Default": 0,
		"ScoreGroup-MaterialAuthenticity": 1
	}
}
```

As shown in the above example, the field “modifiers” contains the name of the score modifiers with a value “1” or “0”. Value “1” means that the modifier will be applied and “0” means that the modifier will not be applied. In this example, only a modifier for "ScoreGroup-MaterialAuthenticity" will be applied.

A global variable named "Default" can be sent with value “1” or “0”. If "Default" = “1”, all the modifiers will be applied except those modifiers sent after the "Default" variable with value “0” that will not be applied. If variable "Default" = “0”, no modifier will be applied except those modifiers sent after the "Default" variable with value “1” that will be applied.

Response

HTTP Status: 201 CREATED

Returns the validation id (randomly generated).

```
{
	“data”:{
		“id”: “VALIDATION_ID”
	}
}
```

Note: Validations may exist for a given period of time and then deleted to avoid having a huge amount of database records and/or images stored on disk. The client will get a 404 error when trying to access a non-existent validation.

Example

```
{
      “code”: “NotFoundValidation”
      “message”: “Resource has not been found”,
}
```

Errors

Code	HTTP Status	Message
UnknownDocumentTypeError	400	The provided image could not be classified
UnknownAnalysisTypeError	400	Unknown analysis type
ScoresConfigurationNotAllowed	400	ScoresConfiguration field is just allowed in obverse analysis
InvalidData	400	ScoresConfiguration field contains invalid JSON
ScoresConfigurationError	400	Scores configuration has an incorrect value
UnallowedLeversError	400	An unknown lever has been sent
DocumentAnalysisError	400	Error analyzing document
EmptyDocumentError	400	Empty document file
InvalidImageType	400	Invalid image type
ImageAlreadyAnalyzedError	400	The provided image type has already been uploaded and analyzed
ErrorProcessingFile	400	The file couldn't be processed properly
DocumentServiceNotReachable	400	Service url not set
DocumentNfcUnavailableError	400	NFC is not available for this document type

BlurredImageError	400	The provided image does not meet the minimum quality
NotAllowedServiceMode	409	Service mode not available
IncompleteValidation	409	This action can not be done because the validation is incomplete
DocumentServiceNotAvailable	504	Service not available

6.4. Put contextual data

Uploads the device contextual data.

PUT /validation/{validation_id}/contextual_data

Request

Name	Req.	Type	Description
jsonData	yes	string	Strings with the contextual data objects

Example

```
jsonData:
{
	"networkOperator":"movistar",
	"networkConnectionType":"WiFi",
	"uniqueDeviceIdentifier":"CE0D9630-AA5D-4FB2-AD71-F2A9D89B4AFF",
	"localization":"52.775555-1.634547",
	"internalStorageSize":"63.99",
	"validasVersion":"1.1.1",
	"deviceModel":"iPhone 6",
	"OSName":"iOS",
	"OSVersion":"11.3.1",
	"language":"es-ES",
	…
}
```

The previous example includes a few contextual data elements that could be sent in this request. However, the keys and values of the jsonData parameter are not restricted to a specific set, so can be freely chosen by the user, containing useful information for its use case.

Response

HTTP Status: 204 NO CONTENT

Errors

Code	HTTP Status	Message
`InvalidData`	`400`	`Invalid json data`

By default, Veridas at cloud never stores logs of any the data being sent on as contextual data. However, some customers have found useful that Veridas may log some specific contextual data for further statistical analysis. Ie: dashboards showing validations splitted by use-case, or billing details segregated by use-case or end customer, etc;

The way to achieve this is by using contextual data keys starting with prefix '**stats_**'

Example

```
jsonData:
{
      "networkOperator":"movistar",     >> will not be logged at Veridas cloud
      "stats_customerID":"00234",       >> will be logged at Veridas cloud
      "stats_channel":"WEB"             >> will be logged at Veridas cloud
}
```

6.5. Put document

Uploads a new document. Returns the document id and the document type.

Creates a new document resource by uploading its obverse image or updating the resource by uploading the obverse with flash and/ or the reverse, using a `POST` request. The API will analyze the provided images. Returns a message indicating if the process was successful, or an error code and a message if not.

PUT `/validation/{validation_id}/document`

Request

Name	Required	Type	Description
`documentImage`	yes	file	Document image as binary.
`documentType`	yes* *when analysisType=ob*	string	The type of the document, the document's country or the document's

	verse. no *otherwise.* ** If no documentType is specified, the system will try tu classify it between the supported spanish documents*		country plus the document group kind.
`analysisType`	yes	string	The type of the image. “obverse”, “reverse” or “obverseFlash”.
`serviceMode`	no	string	The working mode which has to do with the available methods/ endpoints. The available values are: “ocr”, “validation” and “validation_with_flash”. When this parameter is not set, vali-Das will work in “validation_with_flash” mode.
`supportsNfc`	no	boolean	Indicates if the user’s device supports NFC.
`scoresConfiguration`	no. **Only takes effect if sent in the obverse analysis**.	json	Applies modifiers to the calculation of scores (ie: set the minimum age in years or amount of days after the document expiration date allowed to take the document as valid)

serviceMode

This parameter takes the following values:

- ocr: Working mode which allows to obtain the text data contained in the ID document by using OCR techniques but not the document validation scores.
- validation: Working mode used when a document validation is wanted to be done -so the validation scores are generated- but without using a document photo taken with flash. With this mode also the OCR data is generated.
- validation_with_flash: Working mode used when a document validation is wanted to be done using a document photo taken with flash. This is the default mode which is set when the parameter is not sent in the request (only when this mode is available). With this mode also the OCR data is generated.

Each one of these service modes has specific usage and billing conditions which can be requested to Veridas

documentType

This parameter allows the vali-Das service to provide information regarding the type of the I.D. document which is in the image that is being sent in the PUT /validation/{id}/document request. It can take one value among the following ones:

- The document type itself
- The country which the document belongs to (ES, MX, AT, etc..)
- The country which the document belongs to plus the documents group which it belongs to (I.D. cards, Driving Licenses, etc.). The way of doing that is setting the value to XX_ID or XX_DL, being XX the country code, ID if the document belongs to ID cards and DL if it belongs to Driving Licenses.

The different possibilities allowed for the values of this parameter are specified in the document named “Document validation user guide Identidas 1.17”.

scoresConfiguration

This parameter is a json which allows to configure:

- The minimum age (years)
- The days after the document expiration date allowed to take the document as valid
- The status of some modifiers (See appendix 10. Annex 2 for the list of modifiers available for each document type)

In the case of the minimum age (years) or The days after the document expiration date allowed to take the document as valid.

```
{"minimumAcceptableAge" :15, "maximumAcceptableTimeSinceExpiration": 30}
```

vali-Das API supports sending just one of these parameters related to age and time elapsed, or sending both of them together. If no configuration is sent, the default one is applied, which corresponds to:

- The age of majority of the document country, which usually is 18 (years) for minimumAcceptableAge. The valid range is [0, 100].
- 0 (days) for maximumAcceptableTimeSinceExpiration. The valid range is [0, 36500].

This configuration is just applied if it is sent alongside the obverse analysis. If it is sent in the obverse with flash or in the reverse analysis, the indicated error will be returned.

For each one of the two fields passed to the PUT /document, “minimumAcceptableAge” and “maximumTimeElapsedSinceExpiration”, a new score is created. The names for these

scores are `ScoreVal-PD_AcceptableAge-Value` and `ScoreVal-DD_AcceptableExpirationDate-Value` respectively.

To change the status of some modifiers, the field “modifiers” needs to be included in the scoresConfiguration json. I.e.:

```
{
	"minimumAcceptableAge": 14,
	"modifiers":{
		"Default": 0,
		"ScoreGroup-MaterialAuthenticity": 1
	}
}
```

As shown in the above example, the field “modifiers” contains the name of the score modifiers with a value “1” or “0”. Value “1” means that the modifier will be applied and “0” means that the modifier will not be applied. In this example, only modifier for "ScoreGroup-MaterialAuthenticity" will be applied.

A global variable named "Default" can be sent with value “1” or “0”. If "Default" = “1”, all the modifiers will be applied except those modifiers sent after the "Default" variable with value “0” that will not be applied. If variable "Default" = “0”, no modifier will be applied except those modifiers sent after the "Default" variable with value “1” that will be applied.

Response

HTTP Status: 204 NO CONTENT

Errors

Code	HTTP Status	Message
UnknownDocumentTypeError	400	The provided image could not be classified
UnknownAnalysisTypeError	400	Unknown analysis type
ScoresConfigurationNotAllowed	400	ScoresConfiguration field is just allowed in obverse analysis
InvalidScoresConfigurationField	400	ScoresConfiguration field contains invalid JSON
ScoresConfigurationError	400	Scores configuration has an incorrect value
UnallowedLeversError	400	An unknown lever has been sent

DocumentAnalysisError	400	Error analyzing document
DocumentNfcUnavailableError	400	NFC is not available for this document type
BlurredImageError	400	The provided image does not meet the minimum quality
EmptyDocumentError	400	Empty document file
InvalidImageType	400	Invalid image type
ImageAlreadyAnalyzedError	400	The provided image type has already been uploaded and analyzed
ErrorProcessingFile	400	The file couldn't be processed properly
ProcessAlreadyDoneError	400	This process has already been done and cannot be done again
DocumentServiceNotReachable	400	Service url not set
NotAllowedServiceMode	409	Service mode not available
IncompleteValidation	409	This action can not be done because the validation is incomplete
DocumentServiceNotAvailable	504	Service not available

6.6. Get document NFC configuration

This endpoint retrieves the NFC configuration for the document, extracted from the document type and the OCR text read in the obverse image:

GET /validation/{validation_id}/nfc_keys_pins

Response

Returns the document's NFC keys (fields stored on the document's NFC chip that contain personal information) and pins, used to unlock and read the NFC chip on the user device:

HTTP Status: 200 OK

```
{
	"nfcKeys": [
		"DG1_NAME",
		"DG1_SURNAME",
```

```
            "DG1_DOC_NUMBER",
            "DG1_DOB",
            "DG1_DOE",
            "DG1_NATIONALITY",
            "DG1_OPT_DATA",
            "DG1_SEX",
            "DG11_PERS_NUM",
            "DG1_ADDR_LINE",
            "DG1_ADDR_CITY",
            "DG1_ADDR_REGION",
            "DG11_BIRTH_PLACE”
      ],
      "pinValues": [
            "BDN1112233",
            "112233",
            "870402",
            "570876"
      ]
}
```

6.7. Put NFC

This endpoint allows the API user to upload the ID document NFC-chip information in case the document is supported by Veridas and suitable for NFC data reading. This information must be previously obtained from the document's chip using an NFC compatible Android device and the SDK provided by Veridas for this purpose. The user must upload the required information as key-value fields specified by the "Get Document NFC Configuration" endpoint (`/nfc_keys_pins`).
Uploads NFC data and files.

PUT `/validation/{validation_id}/nfc`

Request

Name	Req.	Type	Description
`nfcText`	yes	json	Json with the NFC fields data
`nfcFiles`	no	json	Json containing files obtained from the NFC chip encoded in base 64. The fileName of the file must have one of these values: face, signature or fingerprint.

Example

nfcText: `{"DG1_SEX": "F", "DG1_OPT_DATA": "99999999R", "DG1_DOC_NUMBER": "AAA111111", "DG1_NATIONALITY": "ESP", "DG11_PERS_NUM":`

"00ef6b6eb4474484bc41d055046fccb0", "DG1_NAME": "CARMEN", "DG1_ADDR_REGION": "MADRID", "DG1_ADDR_CITY": "MADRID", "DG1_SURNAME": "ESPINOLA ESPINOLA", "DG1_ADDR_LINE": "AVDA DE MADRID S N", "DG1_DOB": "01 01 1980", "DG1_DOE": "01 01 2025", "DG11_BIRTH_PLACE": "MADRID"}

nfcFiles: *[{"fileName": IMAGE_NAME, "content": BASE64_FILE}]*

Where IMAGE_NAME must be one of the following:

- face
- fingerprint
- signature

It is also possible to send the fields in lowercase (i.e. “dg1_opt_data” instead of “DG1_OPT_DATA”).

Response

HTTP Status: 204 NO CONTENT

Errors

Code	HTTP Status	Message
InvalidNFCData	400	
InvalidData	400	Invalid json data
DocumentServiceNotReachable	400	Service url not set
IncompleteValidation	409	This action can not be done because the validation is incomplete
DocumentServiceNotAvailable	504	Service not available

6.8. Put selfie

Uploads a selfie image and do the following biometric analyses.

- The selfie and the ID document face image similarity comparison where the ID document face image can be the one extracted from the printed ID document, or the one obtained from the NFC chip in case that this information is uploaded to vali-Das
- The “duplicate attack” verification which checks if the image uploaded as a selfie and the one obtained from the ID document (printed or NFC chip) are the same or not.

At least the obverse of the document has to be previously uploaded to do the selfie analyses.

If the selfie alive is provided, it will be used to do the proof of life, replacing the video analysis.

This feature -selfie alive- is disabled by default and has specific billing conditions, so it has to be enabled by Veridas upon explicit request from the customer

`PUT` `/validation/{validation_id}/selfie`

Request

Name	Req.	Type	Description
`image`	yes	file	Selfie image as binary, sent as a file of the multipart/form-data
`image_alive`	no (Require to be contracted)	file	Smiling selfie image as binary, sent as a file of the multipart/form-data
`antispoofing`	no (Require to be contracted)	string	Indication that antispoofing verification is desired

antispoofing

This feature -selfie antispoofing- is disabled by default and has specific billing conditions, so it has to be enabled by Veridas upon explicit request from the customer

This parameter can take the following values:

- “True” or “yes”: Indicates that the spoofing detection wants to be done. ValidasScoreSelfieAuthenticity score is then generated.
- “no”, “False” or not to send the parameter: Indicates that the spoofing detection does not want to be done, so no specific score is generated.

Response

HTTP Status: 204 NO CONTENT

Errors

Code	HTTP Status	Message

EmptySelfieError	400	Empty selfie file
NotAllowedSelfieError	400	Selfie analysis is not allowed when video has been already sent
InvalidImageType	400	Invalid image type
ErrorProcessingFile	400	The file couldn't be processed properly
FaceBiometricsServiceNotReachable	400	Service url not set
IncompleteValidation	409	This action can not be done because the validation is incomplete
FaceBiometricsServiceNotAvailable	504	Service not available

6.9. Put challenge generation

Generates a random challenge, returning a JWS token (RFC7515) containing a signed JSON with a challenge description.

PUT `/validation/{validation_id}/challenges/generation`

Request

Name	Req.	Type	Description
type	no	string	The type of challenge, two possible values: “selfie-alive-pro” and “random-number”. The type parameter can be omitted. If so, the selfie-alive-pro type will be used.
length*	no	integer	Desired length of the “Selfie Alive Pro” feature challenge. By default it is 2. The minimum is 1 and the maximum is 10. The recommended values are 2 for standard security and 6 for high security.
expiration*	no	integer	Challenge expiration time in seconds, by default it is 1800 seconds

*Only available with “selfie-alive-pro” type.

Response

HTTP Status: 200 OK


```
{
    "data":
      {
            "challenge":
      "eyJhbGciOiJFUzUxMiIsInR5cCI6IkpXVCJ9.eyJzY2hlbWEiOiJodHRwczobL3Zlcm
      lkYXMuY29tL2Rhc2ZhY2Uvc2NoZW1hcy9jaGllZi12MC4wLjAuanNvbiIsImlkIjoiNW
      VlNTVlOGU0YTE5NDUwN3FmMWUwMGJjN2Y3MTQzODIiLCJ0aW1lc3RhbXAiOiIyMDIwLT
      AzLTA2VDEzOjA4OjEyLjIxMDIzMSswMTowMCIsImV4cGlyZXMiOiIyMDIwLTAzLSA2VD
      EzOjM4OjEyLjIxMDIzMSswMTowMCIsImNoYWxsZW5nZSI6eyJjbGFzcyI6InNlcXVlbn
      RpYWwiLCJhY3Rpb25zIjpbeyJjbGFzcyI6Im1vdmUtaGVhZC1hbmQtYmFjayIsIm5hbW
      UiOiJhY3Rpb24tMCIsInBhcmFtZXRlcnMiOnsiZGlyZWN0aW9uIjoibGVmdCJ9fSx7Im
      Ng3gibW92ZS1oZWFkLWFuZC1iYWNrIiwibmFtZSI6ImFjdGlvbi0xIiwicGFyYW1ldGV
      ycyI6eyJkaXJlY3Rpb24iOiJib3R0b20ifX0seyJjbGFzcyI6Im1vdmUtaGVhZC1hbmQ
      tYmFjayIsIm5hbWUiOiJhY3Rpb24tMiIsInBhcmFtZXRlcnMiOnsiZGlyZWN0aW9uIjo
      idG9wIn19XX19.AVcD7lHytFBHeBxArnCPG4d48G_wcqTMBiBqXehWiRC2QCMhekWvSv
      5M0RK_Hfp3uhIaUewXfXzRbmpC7VvEqXZXABxC2SjlvD1jYuhVDLglwE-rmVA3QG20WO
      aRVfOUQCPXZ8LZRr_U8A43sVhK2b_I_8gJv4hklSpaaWxwxSXu0ZZm"
      }
}
```


Errors

Code	HTTP Status	Message
ChallengeGenerationError	400	Error happened while generating the challenge token
UnknownChallengeTypeError	400	Unknown challenge type
FaceBiometricsServiceNotReachable	400	Service url not set
FaceBiometricsServiceNotAvailable	504	Service not available

6.10. Put video-photo challenge

Upload a selfie image, a video selfie recorded by doing the previously obtained challenge, a video annotations file and the challenge token itself, and then do the following biometric analyses.

- The selfie and the ID document face image similarity comparison where the ID document face image can be the one extracted from the printed ID document, or the one obtained from the NFC chip in case that this information is uploaded to vali-Das
- The “duplicate attack” verification which checks if the image uploaded as a selfie and the one obtained from the ID document (printed or NFC chip) are the same or not.
- The proof of life verification.

At least the obverse of the document has to be previously uploaded to do the selfie analyses.

`PUT /validation/{validation_id}/challenges/video-photo`

Request

Name	Req.	Type	Description
`selfie`	yes	file	Selfie image as binary, sent as a file of the multipart/form-data
`video`	yes	file	video challenge as binary, sent as a file of the multipart/form-data
`annotations`	yes	file	vtt valid file containing the video annotations
`token`	yes	string	the challenge token previously obtained
`videoFrames`	no	json	Video frames as JSON
`audio`	no	string	Audio file encoded into a base64 string

videoFrames and audio parameters are just needed when it’s mandatory to upload all the video frames instead of the entire video file. This happens frequently when the video is captured with the Veridas’ iOS HTML SDK and using the Safari browser. In this case, videoFrames parameter must has this format:

```
{"frames": [{"position": 0, “data”: “frame1_base64”}, {“position": 1, “data”: “frame2_base64”}, {“position”: 2, “data”: “frame3_base64”},...]}
```

Response

HTTP Status: 204 NO CONTENT

Errors

Code	HTTP Status	Message
`EmptySelfieError`	`400`	Empty selfie file

`ErrorProcessingFile`	`400`	The file couldn't be processed properly
`EmptyVideoError`	`400`	Empty video file
`InvalidVideoFrames`	`400`	Invalid video frames
`InvalidVideoType`	`400`	Invalid video type
`EmptyAnnotationsError`	`400`	Empty annotations file
`VideoConverterServiceNotReachable`	`400`	Service url not set
`FaceBiometricsServiceNotReachable`	`400`	Service url not set
`IncompleteValidation`	`409`	This action can not be done because the validation is incomplete
`VideoPhotoChallengeNotAllowed`	`409`	This action can not be done because a selfie has been already sent
`VideoConverterServiceNotAvailable`	`504`	Service not available
`FaceBiometricsServiceNotAvailable`	`504`	Service not available

6.11. Put video

Uploads a video selfie and does the biometrics analyses. ValiDas supports several video codecs, however, it's recommended to use 'h264' (mp4) or 'vp8' (webm).

PUT `/validation/{validation_id}/video`

Request

option 1: Using "video" parameter
option 2: Using "videoFrames" and "audio" parameters

Name	Req.	Type	Description
`video`	no*	file	Selfie video as binary.
`videoFrames`	no*	json	Video frames as JSON

audio	no*	string	Audio file encoded into a base64 string

* “video” or “videoFrames” and “audio” must be sent alongside the request but not both of them. If “video” is sent,” videoFrames” and “audio” must not be sent but if “videoFrames” and “audio” are sent, “video” must not be sent.

Additional information

videoFrames and audio parameters are just needed when it’s mandatory to upload all the video frames instead of the entire video file. This happens frequently when the video is captured with the Veridas’ iOS HTML SDK and using the Safari browser. In this case, videoFrames parameter must has this format:

```
{"frames": [{"position": 0, “data”: “frame1_base64”}, {“position": 1, “data”: “frame2_base64”}, {“position”: 2, “data”: “frame3_base64”},...]}
```

Response

HTTP Status: 204 NO CONTENT

Errors:

Code	HTTP Status	Message
EmptyVideoError	400	Empty video file
InvalidData	400	Invalid json data
ErrorProcessingFile	400	The file couldn't be processed properly
InvalidVideoFrames	400	Invalid video frames
InvalidVideoType	400	Invalid video type
ProofOfLifeServiceNotReachable	400	Service url not set
VideoConverterServiceNotReachable	400	Service url not set
IncompleteValidation	409	This action can not be done because the validation is incomplete
ProofOfLifeServiceNotAvailable	504	Service not available
VideoConverterServiceNotAvailable	504	Service not available

6.12. Put timestamp

Timestamp the evidences with one of the available time stamp authorities. **This action should be done right before confirming the validation.**

`PUT /validation/{validation_id}/timestamp`

Request

Name	Req.	Type	Description
timestampAuthority	no	string	Time stamp authority to be used. By default, the evidences will be time stamped with the “standard” tsa. Other available values are “fnmt” and “izenpe”.

Response

HTTP Status: 204 NO CONTENT

Errors

Code	HTTP Status	Message
`UnsupportedTSAAuthority`	`400`	The specified signer is not supported by the service
`UnavailableTimestampService`	`504`	The timestamp could not be performed, try again or confirm validation

6.13. Get Timestamp

Retrieve the timestamp data in zip format. This zip file will contain two zip files, one zip with all the validation evidences and another one containing .tsr (timestamp response) and .tsq (timestamp request) files.

`GET /validation/{validation_id}/timestamp`

Response

HTTP Status: 200 NO CONTENT

Binary corresponding to the ZIP file.

Errors

Code	HTTP Status	Message
`IncompleteValidation`	`409`	This action can not be done because the validation is incomplete

6.14. Get OCR

Retrieves the document ocr originally obtained by the Document Analysis process.

`GET /validation/{validation_id}/ocr`

Response

HTTP Status: 200 OK


```
{
  "data": {
    "nodes": [
      {
        "fieldName": "Nombre / Name",
        "name": "PD_Name_Out",
        "text": "JUAN"
      },
      {
        "fieldName": "Apellidos / Last Names",
        "name": "PD_LastName_Out",
        "text": "PEREZ PEREZ"
      },
      {
        "fieldName": "DNI / DNI",
        "name": "PD_IdentificationNumber_Out",
        "text": "00000051T"
      },
      {
        "fieldName": "Fecha de Validez / Expiration Date",
        "name": "DD_ExpirationDate_Out",
```

```
      "text": "01 06 2016"
    },
    {
      "fieldName": "IDESP / IDESP",
      "name": "DD_DocumentNumber_Out",
      "text": "AAA000000"
    },
    {
      "fieldName": "Sexo / Gender",
      "name": "PD_Sex_Out",
      "text": "M"
    },
    {
      "fieldName": "Nacionalidad / Nationality",
      "name": "PD_Nationality_Out",
      "text": "ESP"
    },
    {
      "fieldName": "Fecha de Nacimiento / Date of Birth",
      "name": "PD_BirthDate_Out",
      "text": "01 01 1951"
    },
    {
      "fieldName": "Municipio de Nacimiento / Town of Birth ",
      "name": "PD_BirthPlaceMunicipality_Out",
      "text": "MADRID"
    },
    {
      "fieldName": "Provincia de Nacimiento / Province of Birth",
      "name": "PD_BirthPlaceState_Out",
      "text": "MADRID"
    },
    {
      "fieldName": "Domicilio / Address ",
      "name": "PD_AddressStreet_Out",
      "text": "C JULIAN GONZALEZ SEGADOR S N"
    },
    {
      "fieldName": "Municipio de Domicilio / Town of Residence",
      "name": "PD_AddressMunicipality_Out",
      "text": "MADRID - MADRID"
    },
    {
      "fieldName": "Provincia de Domicilio / Province of Residence",
      "name": "PD_AddressState_Out",
      "text": "MADRID"
    }
  ]
}
```

```
}
```

6.15. Get validation scores

Retrieves the scores obtained in document and biometry analysis, as well as the IDentidas version which has been used to calculate the document scores.

`GET /validation/{validation_id}/scores?categories`

Returns a list of scores (under the data -> `scores` keys). Each score represents a validation performed on the document over a feature:

Field	Description
`name`	Score name
`value`	Score value. Float number in the range [0,1].

The *categories* query parameter allows to retrieve the most useful scores from a consumer client App (like boi-Das) point of view.

Response

HTTP Status: 200 OK


```
{
  "data": {
    "biometryScores": [
      {
        "name": "ValidasScorePhotoId",
        "value": 0.04565465917179558
      },
      {
        "name": "ValidasScoreSelfie",
        "value": 0.04565465917179558
      },
      {
        "name": "ValidasScoreVideo",
        "value": 0.09144748463204097
      },
      {
        "name": "ValidasScoreLifeProof",
        "value": 0.998728301901118
      },
      {
        "name": "ValidasScoreSelfieAuthenticity",
```

```
      "value": 0.9822041770452932
    },
    {
      "name": "ValidasScoreDuplicateAttack",
      "value": 0.8920045770653942
    },
   {
      "name": "ValidasScoreNfcSelfie",
      "value": 0.9682950392203321
    }
   {
      "name": "ValidasScoreNfcPhotoId",
      "value": 0.8673849188372615
    }
  ],
  "documentScores": [
          ...
          {
              "name": "ValiDasNumeroDNI-MRZNumeroDNI",
              "value": 0.7777777777777778
          },
          {
              "name": "ScoreOCRObverse",
              "value": 0.9944444444444445
          },
          {
              "name": "ScoreTotalNoFlash",
              "value": 0.41937345696586403
          },
          ...
   ],
   "integrityScores": [
          ...
           {
              "name": "ValidasScoreDocObverseIntegrity",
              "value": 1.0
           },
           {
              "name": "ValidasScoreSelfieIntegrity",
              "value": 0.0
           },
           {
              "name": "ValidasScoreIntegrity",
              "value": 0.0           },
           ...
   ],
   "summaryScores": [
          {
              "name": "ValidationGlobalScore",
```

```
                "value": 0.0
            }
        ],
        “notValidatedScores”: [
            {
                "name": "ValidasScoreIntegrity",
                "value": 0.0
            },
            {
                 "name": "ValidasScoreSelfie",
                 "value": 0.04565465917179558
            },
            ...
         ],
        "identidasVersion": "1.24.1"
    }
}
```

Errors

Code	HTTP Status	Message
`InvalidParameter`	`400`	Url parameters not valid
`IncompleteValidation`	`409`	This action can not be done because the validation is incomplete

6.16. Get validation by validation_id

Retrieves a validation.

Content-type: multipart/form-data

It is important to take into account that createdAt validation date has the following format: GMT + CET/CEST.

`GET /validation/{validation_id}`

Response

HTTP Status: 200 OK

```
{
  "data":
```

```
    {
      "createdAt": "2018-03-16 12:50:47 +0100",
      "data": {
       "integrity": {...},
        "biometry": {...},
        "documentVsVideo": {...},
        "contextualData": [...],
        "document": {
          "_links": {...},
          "nodes": {...},
          "scores": {...}
        },
        “summary”: {
          "scores": [...],
          “notValidatedScores”: [...]
        },
        “challenges”: {...},
        "identidasVersion": "1.12.2",
        "timestamp": {
          "_links": {...},
          "createdAt": "2018-03-16 12:51:47 +0100",
          "timestampAuthority": "standard"
        }
      },
      "documentId": 7e84ff4eb000409892c9995e4955e636,
      "documentType": DNI30,
      "id": "7e84ff4eb000409892c9995e4955e636",
      "pollAnswers": null,
      "state": "on-course"
    }
}
```


6.17. Confirm validation

Confirms and ends the validation, optionally providing -just in case- the retrieved ocr data corrected by the user. Just validations with at least a document ID obverse image analysis properly done can be confirmed.

PUT `/validation/{validation_id}/confirmation`

Request

Name	Req.	Type	Description
correctedOcr	no	string	Strings with the corrected ocr fields

Response

HTTP Status: 204 NO CONTENT

Errors

Code	HTTP Status	Message
`IncompleteValidation`	`409`	This action can not be done because the validation is incomplete

6.18. Cancel validation

Cancels the validation.

`PUT /validation/{validation_id}/cancellation`

Response

HTTP Status: 204 NO CONTENT

Errors

Code	HTTP Status	Message
`NotOnCourseError`		This action can not be done once the validation is confirmed or cancelled

6.19. Delete a validation

Deletes a validation and all the related files. Just confirmed and cancelled validations can be deleted.

`DELETE /validation/{validation_id}`

Response

HTTP Status: 204 NO CONTENT

Errors:

Code	HTTP Status	Message
NotAllowed	409	An on-course validation cannot be deleted

6.20. Get available documents by country

This endpoint will be deprecated in 2021Q3 release. Please update your integrations with vali-Das by that date.

Retrieves the vali-Das supported countries and documents currently under the scope of the autoclassiffication engine.

`GET /document_types`

Response

HTTP Status: 200 OK.

```
{
  "data": {
    "AR": [
      "ARG2009",
      "ARG2012"
    ],
    "AT": [
      "AT_IDCard_2002"
    ],
      "DK": [
      "DK_DrivingLicense_1997",
      "DK_DrivingLicense_2013"
    ],
    "ES": [
      "DNI20",
      "DNI30",
      "NIE2011",
      "NIE2003",
      "NIE2010"
    ],

    ...
}
```

6.21. Get available types

Retrieve detailed information of the whole list of documents currently available for analysis.

`GET /available-types?filter_key=filter_value1,filter_value2`

This endpoint has few basic functionalities for filtering these types:

- **country**: two-letter code of the country which document belongs, according with the ISO 3166 code (ie: MX, all countries in the document coverage are available)
- **type**: type of document (ie: IDCard, DrivingLicense, ResidencePermit)
- **version**: version of document to analyze (ie: 1,2)
- **required_document_sides**: it specifies which sides of document are required to complete analysis (ie: obverse, reverse)
- **size**: the size of the document (ie: ID1, ID2, ID3)
- **geographical_area**: area in which the document is being defined as a geographical zone (for example, US has different geographical areas for each state).

Response

HTTP Status: 200 OK.


```
{
	"items": [
	{
	  "country": "ES",
	  "description": "Spain IDCard 2015 v2 (DNI 3.0)",
	  "geographical_area": [
	    "ES"
	  ],
	  "group_id": [
	    "ES2",
	    "ES2_ID"
	  ],
	  "id": "ES_IDCard_2015",
	  "required_document_sides": [
	    "obverse",
	    "reverse"
	  ],
	  "short_description": "DNI 3.0",
	  "size": "ID1",
	  "type": "IDCard",
	  "version": [
	    2
	  ]
	},
```

```
            {
              "country": "ES",
              "description": "Spain IDCard 2006 v2 (DNI 2.0)",
              "geographical_area": [
                  "ES"
              ],
              "group_id": [
                "ES2",
                "ES2_ID"
              ],
              "id": "ES_IDCard_2006",
              "required_document_sides": [
                "obverse",
                "reverse"
              ],
              "short_description": "DNI 2.0",
              "size": "ID1",
              "type": "IDCard",
              "version": [
                2
              ]
            },
             ...
    }
```


6.22. Get available time stamp authority

Get detailed information of the whole list of available timestamp authorities.

`GET /available-tsa`

Response

HTTP Status: 200 OK.


```
{
    "items": [
        {
            "name": "fnmt",
            "description": "The Fábrica Nacional de Moneda y Timbre
                            time stamp authority"
        },
        {
            "name": "standard",
            "description": "Standard time stamp authority"
        },
        {
```

```
            "name": "izenpe",
            "description": "Basque administration time stamp authority"
        }
    ]
}
```


6.23. Get description document nodes

Retrieve description of the whole list of document nodes available for analysis.

`GET /document/ocr/field-description`

Response

HTTP Status: 200 OK.


```
{
        "DD_Authority_Out": "Document issuing Authority ",
        "DD_CANCode_Out": "CAN code",
        "DD_DocumentNumber_Out": "Document number",
        "DD_DocumentType_Out": "Document type",
        "DD_EstablishmentDate_Out": "Establishment date",
        "DD_ExpeditionDate_Out": "Document expedition date",
        "DD_ExpeditionPlace_Code_Out": "Expedition place code",
        "DD_ExpeditionPlace_Out": "Expedition place",
        "DD_ExpirationDate_Out": "Document expiration date",
        "DD_MRZ_MRZ": "MRZ content",
        "DD_MRZ_Out": "MRZ content",
        "DD_PDF_Barcode": "PDF417 decoded string",
        "DD_PermissionType_Out": "Permission type",
        "Fecha Expedición": "Document expedition date",
        "NodoTemporalEspacioGrupos": "",
        "OD_BirthPlaceInfo_Out": "Birthplace info",
        "OD_CAN_Out": "CAN code",
        "OD_CUIL_Out": "CUIL code",
        "OD_CURP_Out": "CURP code",
        "OD_CodeCAN_Out": "CAN code",
        "OD_Codebar_Out": "Codebar decoded string",
        …
}
```


7. Generic API errors

Errors:

Code	HTTP Status	Message
ValidationError	400	The provided data is not valid.
ErrorProcessingRequest	400	Processing previous request
ErrorUpdateValidation	400	Validation deleted during processing
ForbiddenResource	403	You don't have access to the requested resource
NotFoundValidation	404	Resource has not been found
MethodNotAllowed	405	The requested method is not allowed for this endpoint
InvalidTenant	409	The database for the given customer does not exist
NotOnCourseError	409	This action can not be done once the validation is confirmed or cancelled
Gone	410	The resource is gone
InternalServerError	500	An error occurred while processing your request

8. Example Workflow

In this section we describe an example workflow (with CURL examples) to show how this API can be used in the “Validation with flash” mode (which includes all of the functions of the “OCR” and “Validation” modes plus the flash-only validations).

Let us suppose that the base URL of our service is:

https://api.eu.veri-das.com/validas

Step 1: Initialize the validation and get the validation id

The first step is to initialize the validation object and get the validation Id which will be used in subsequent requests. In order to do that, we must issue a **POST** request to the `/v1/validation` endpoint. For example:

Request:

```
curl -X POST \
  https://api.eu.veri-das.com/validas/v1/validation \
       -H 'cache-control: no-cache' \
       -H 'content-type: multipart/form-data' \
       -H 'apikey: $APIKEY'
```

Response:

HTTP status: 201

```
{
 "data": {
   "id": "6ff8ad746169460697d149e371406425"
 }
}
```

The service returns the new validation resource id (6ff8ad746169460697d149e371406425) which will be used in the following requests.

Step 2: Upload the document obverse image

The first step of the document analysis is to upload the document’s obverse image. In order to do that, we must issue a **PUT** request to the `/v1/validation/{validation_id}/document` endpoint. For example:

Request:

```
curl -X POST \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id}/document \
       -H 'cache-control: no-cache' \
       -H 'content-type: multipart/form-data' \
       -H 'apikey: $APIKEY' \
       -F 'documentImage=@my_document_obverse_image.jpeg' \
       -F 'analysisType=obverse' \
       -F 'serviceMode=validation_with_flash' \
       -F 'documentType=ES_IDCard_2015'
```

In this case we're uploading an image called `my_document_obverse_image.jpeg` without a document type (the service will attempt to guess it)

Response:

HTTP status: 204

The service returns the HTTP status code 204 NO CONTENT which indicates that the analysis has gone well.

Step 3: Upload the document obverse with flash image

The first step of the document analysis is to upload the document's obverse image. In order to do that, we must issue a **PUT** request to the `/v1/validation/{validation_id}/document` endpoint. For example:

Request:

```
curl -X POST \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id}/document \
       -H 'cache-control: no-cache' \
       -H 'content-type: multipart/form-data' \
       -H 'apikey: $APIKEY' \
       -F 'documentImage=@my_document_obverse_flash_image.jpeg' \
       -F 'analysisType=obverseFlash'
```

In this case we're uploading an image called `my_document_obverse_flash_image.jpeg`

Response:

HTTP status: 204

The service returns the HTTP status code 204 NO CONTENT which indicates that the analysis has gone well.

Step 4: Upload the document reverse

The first step of the document analysis is to upload the document's reverse image. In order to do that, we must issue a **PUT** request to the `/v1/validation/{validation_id}/document` endpoint. For example:

Request:

```
curl -X POST \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id}/document \
       -H 'cache-control: no-cache' \
       -H 'content-type: multipart/form-data' \
       -H 'apikey: $APIKEY' \
       -F 'documentImage=@my_document_reverse_image.jpeg' \
       -F 'analysisType=reverse
```

In this case we're uploading an image called `my_document_reverse_image.jpeg`

Response:

HTTP status: 204

The service returns the HTTP status code 204 NO CONTENT which indicates that the analysis has gone well.

Step 5: Get document NFC configuration

Once the images have been uploaded, we can retrieve the NFC configuration (on compatible document types) and use the returned pins and keys to read the NFC data on the client side (using a compatible phone). In order to do that we must issue a **GET** request to the `/v1/validation/{validation_id}/nfc_keys_pins` endpoint:

Request:

```
curl -X GET \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id}/nfc_keys_pins
\
  -H 'cache-control: no-cache' \
  -H 'content-type: multipart/form-data' \
  -H 'apikey: $APIKEY'
```

Response:

HTTP status: 200

```
{
```

```
   "data":
      "nfcKeys": [
            "DG1_NAME",
            "DG1_SURNAME",
            "DG1_DOC_NUMBER",
            "DG1_DOB",
            "DG1_DOE",
            "DG1_NATIONALITY",
            "DG1_OPT_DATA",
            "DG1_SEX",
            "DG11_PERS_NUM",
            "DG1_ADDR_LINE",
            "DG1_ADDR_CITY",
            "DG1_ADDR_REGION",
            "DG11_BIRTH_PLACE",
            "DG2_ID_PHOTO"
      ],
      "pinValues": [
            "BDN1112233",
            "112233",
            "870402"
      ]
   }
}
```

Step 6: Upload document NFC data

With the NFC pins and keys values retrieved in the previous step, we can unlock and read the data contained in the NFC chip of the document. Once we have that information, we can upload it to the service by doing a **PUT** request to the endpoint `/v1/validation/{validation_id}/nfc`:

Request:

```
curl -X PUT \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id}/nfc \
  -H 'cache-control: no-cache' \
  -H 'content-type: multipart/form-data' \
  -H 'apikey: $APIKEY' \
  -F 'nfcFiles=[{"fileName":"face",
               "content": BASE64_FILE}]' \
  -F 'nfcText={"DG1_SEX": "F",
             "DG1_OPT_DATA": "987654",
              "DG1_DOC_NUMBER": "99999999R",
              "DG1_NATIONALITY": "ESP",
              "DG11_PERS_NUM": "00ef6b6eb4474484bc41d055046fccb0",
              "DG1_NAME": "PEPA",
              "DG1_ADDR_REGION": "MADRID",
```

```
"DG1_ADDR_CITY": "MADRID",
"DG1_SURNAME": "ESPINOLA ESPINOLA",
"DG1_ADDR_LINE": "AVDA DE MADRID S N",
"DG1_DOB": "01 01 1980",
"DG1_DOE": "01 01 2025",
"DG11_BIRTH_PLACE": "Madrid"}'
```

Response:

HTTP status: 204

Step 7: Upload the selfie photo

The first step of the face biometry analysis is to upload the selfie photo image. In order to do that, we must issue a **PUT** request to the `/v1/validation/{validation_id}/selfie` endpoint. For example:

Request:

```
curl -X POST \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id}/selfie \
       -H 'cache-control: no-cache' \
       -H 'content-type: multipart/form-data' \
       -H 'apikey: $APIKEY' \
       -F 'imagemage=@my_selfie_image.jpeg'
```

Response:

HTTP status: 204

The service returns the HTTP status code 204 NO CONTENT which indicates that the analysis has gone well.

Step 8: Upload the selfie video

The second step of the face biometry analysis is to upload the selfie video. In order to do that, we must issue a **PUT** request to the `/v1/validation/{validation_id}/video` endpoint. For example:

Request:

```
curl -X POST \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id}/video \
       -H 'cache-control: no-cache' \
       -H 'content-type: multipart/form-data' \
       -H 'apikey: $APIKEY' \
```

```
      -F 'video=@my_selfie_video.jpeg'
```

Response:

HTTP status: 204

The service returns the HTTP status code 204 NO CONTENT which indicates that the analysis has gone well.

Step 9: Confirm the validation

When all the required data has been sent to vali-Das, the process comes to an end, and it has to be indicated by issuing a **PUT** request to the `/v1/validation/{validation_id}/confirmation` endpoint. For example:

Request:

```
curl -X POST \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id}/confirmation \
      -H 'cache-control: no-cache' \
      -H 'content-type: multipart/form-data' \
      -H 'apikey: $APIKEY' \
      -F   'correctedOCR=[{"name":"PD_Name_Out",   "confirmedText":"Pepe   Luis"},
{"name":"PD_LastName_Out", "confirmedText": "Perex Perez"}]'
```

Response:

HTTP status: 204

The service returns the HTTP status code 204 NO CONTENT which indicates that the request has gone well.

Step 10: Get the validation results

When the validation has been confirmed, the data generated by the validation process can be retrieved by issuing a **GET** request to the `/v1/validation/{validation_id}` endpoint. For example:

Request:

```
curl \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id} \
      -H 'cache-control: no-cache' \
      -H 'content-type: multipart/form-data' \
      -H 'apikey: $APIKEY'
```

Response:

HTTP status: 200

The service returns the HTTP status code 200 and all the data generated by vali-Das by doing the different analysis processes.


```
{
 "data": {
   "createdAt": "2020-06-26 07:49:16 +0200",
   "data": {
     "biometry": {
       "_links": [
         {
                                                                                "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c8
2/selfie_d4fafa87cdf348cd876e643595b22c82_09890a9ec27751420abd.jpeg",
           "rel": "image:selfie"
         },
         {
                                                                                "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c8
2/video_d4fafa87cdf348cd876e643595b22c82_b9109102a453259c86eb.flv",
           "rel": "video:selfie"
         }
       ],
       "scores": [
         {
           "name": "ValidasScoreNfcPhotoId",
           "value": 0.0743428729754
         },
         {
           "name": "ValidasScoreSelfie",
           "value": 0.00019604036154924467
         },
         {
           "name": "ValidasScorePhotoId",
           "value": 0.020908052921527406
         },
         {
           "name": "ValidasScoreDuplicateAttack",
           "value": 0.9659797809158062
         },
         {
           "name": "ValidasScoreNfcSelfie",
           "value": 0.00019604036154924467
         },
         {
```

```
          "name": "ValidasScoreLifeProof",
          "value": 0.9998804377574069
        },
        {
          "name": "ValidasScoreVideo",
          "value": 0.0070337886306746185
        }
      ]
    },
    "contextualData": [],
    "document": {
      "_links": [
        {
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c82/nfc_face_d4fafa87cdf348cd876e643595b22c82_1dc1419789b34b02b3af.jpeg",
          "rel": "image:nfc:face"
        },
        {
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c82/reverse_d4fafa87cdf348cd876e643595b22c82_168be5eff72dac66de4d.jpeg",
          "rel": "image:reverse"
        },
        {
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c82/obverse_d4fafa87cdf348cd876e643595b22c82_14ddfd343407aac151fb",
          "rel": "image:obverse"
        },
        {
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c82/obverseFlash_d4fafa87cdf348cd876e643595b22c82_048d4ab48cb83cf81c4c.jpeg",
          "rel": "image:obverse_flash"
        },
        {
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c82/obverse_d4fafa87cdf348cd876e643595b22c82_14ddfd343407aac151fb_cut_face.png",
          "rel": "image:face"
        },
        {
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c82/reverse_d4fafa87cdf348cd876e643595b22c82_168be5eff72dac66de4d_cut.jpeg",
          "rel": "image:reverse:cut"
        },
        {
```

```
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c8
2/obverse_d4fafa87cdf348cd876e643595b22c82_14ddfd343407aac151fb_cut",
            "rel": "image:obverse:cut"
          },
          {
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c8
2/obverse_d4fafa87cdf348cd876e643595b22c82_14ddfd343407aac151fb_cut_signature.png"
,
            "rel": "image:signature"
          },
          {
                                                                    "href":
"https://api.eu.veri-das.com/validas/v1/validation/d4fafa87cdf348cd876e643595b22c8
2/obverseFlash_d4fafa87cdf348cd876e643595b22c82_048d4ab48cb83cf81c4c_cut.jpeg",
            "rel": "image:obverse_flash:cut"
          }
        ],
        "nodes": [
          {
            "confirmedText": "Antonio Luis",
            "fieldName": "Nombre / Name",
            "name": "PD_Name_Out",
            "text": "PEPA"
          },
          {
            "confirmedText": "Garcia Lozano",
            "fieldName": "Apellidos / Last Names",
            "name": "PD_LastName_Out",
            "text": "ESPINOLA ESPINOLA"
          },
          {
            "fieldName": "DNI / DNI",
            "name": "PD_IdentificationNumber_Out",
            "text": "987654"
          },
          {
            "fieldName": "Fecha de Validez / Expiration Date",
            "name": "DD_ExpirationDate_Out",
            "text": "01 01 2025"
          },
          {
            "fieldName": "Número de Soporte / Support Number",
            "name": "DD_DocumentNumber_Out",
            "text": "99999999R"
          },
          {
            "fieldName": "CAN / CAN",
```

```
      "name": "OD_CAN_Out",
      "text": "987654"
    },
    {
      "fieldName": "Sexo / Gender",
      "name": "PD_Sex_Out",
      "text": "F"
    },
    {
      "fieldName": "Nacionalidad / Nationality",
      "name": "PD_Nationality_Out",
      "text": "ESP"
    },
    {
      "fieldName": "Fecha de Nacimiento / Date of Birth",
      "name": "PD_BirthDate_Out",
      "text": "01 01 1980"
    },
    {
      "fieldName": "Municipio de Nacimiento / Town of Birth ",
      "name": "PD_BirthPlaceMunicipality_Out",
      "text": "MADRID"
    },
    {
      "fieldName": "Provincia de Nacimiento / Province of Birth",
      "name": "PD_BirthPlaceState_Out",
      "text": "MADRID"
    },
    {
      "fieldName": "Domicilio / Address",
      "name": "PD_AddressStreet_Out",
      "text": "AVDA DE MADRID S N"
    },
    {
      "fieldName": "Municipio de Domicilio / Town of Residence",
      "name": "PD_AddressMunicipality_Out",
      "text": "MADRID"
    },
    {
      "fieldName": "Provincia de Domicilio / Province of Residence ",
      "name": "PD_AddressState_Out",
      "text": "MADRID"
    },
    {
      "fieldName": "Padres / Parents",
      "name": "OD_Parents_Out",
      "text": "JUAN / CARMEN"
    }
  ],
```

```
  "scores": [
    {
      "name": "ValiDasMRZPaisExpedicionValue1",
      "value": 1
    },
    {
      "name": "ValiDasMRZFechaDeValidezRegular1",
      "value": 1
    },
    {
      "name": "ValiDasMRZFechaDeValidezDate2",
      "value": 1
    },
    {
      "name": "ScorePrimerApellidoOCR",
      "value": 0.8333333333333334
    },
    {
      "name": "ScoreProvinciaNacimientoOCR",
      "value": 1
    },
    {
      "name": "ScoreTotal",
      "value": 0.21443352903465263
    }
  ]
},
"integrity": {
  "scores": [
    {
      "name": "ValidasScoreDocObverseIntegrity",
      "value": 1.0
    },
    {
        "name": "ValidasScoreDocObverseFlashIntegrity",
        "value": 1.0
     },
    {
        "name": "ValidasScoreDocReverseIntegrity",
        "value": 1.0
     },
    {
        "name": "ValidasScoreSelfieIntegrity",
        "value": 1.0
    },
    {
        "name": "ValidasScoreIntegrity",
        "value": 1.0
     },
```

```
        ]
      },
      "identidasVersion": "1.24.1"
    },
    "documentId": "20f401931c514e17aef67262d2e4f63f",
    "documentType": "DNI30",
    "id": "d4fafa87cdf348cd876e643595b22c82",
    "pollAnswers": null,
    "serviceMode": "validation_with_flash",
    "state": "confirmed"
  }
}
```


Step 11: Delete the validation

When all the required data has been retrieved from vali-Das, validation should be deleted by issuing a **DELETE** request to the `/v1/validation/{validation_id}` endpoint. For example:

Request:

```
curl -X DELETE \
  https://api.eu.veri-das.com/validas/v1/validation/{validation_id} \
       -H 'cache-control: no-cache' \
       -H 'apikey: $APIKEY' \
       -H 'content-type: multipart/form-data'
```

Response:

HTTP status: 204

The service returns the HTTP status code 204 NO CONTENT which indicates that the request has gone well.

9. Annex 1: Face Biometry Performance Report

This information is detailed on the document:

- ***das-Face Performance Report - v2.7***

10. Annex 2: Documents and modifiers available to be sent in PUT /document scoresConfiguration parameter

All colour documents have the ScoreGroup-ColorAuthenticity modifier or modifier. In addition in the next table are shown all additional modifiers by document.

Documents	Modifiers
AD_DrivingLicense_1990	• ScoreGroup-PhotoAuthenticity
AL_IDCard_2009	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
AR_IDCard_2009	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
AR_IDCard_2012	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_Expirat

	ionDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
AT_DrivingLicense_2006	• ScoreGroup-MaterialAuthenticity • ScoreGroup-PhotoAuthenticity
AT_DrivingLicense_2014	• ScoreGroup-MaterialAuthenticity • ScoreGroup-PhotoAuthenticity
AT_IDCard_2002	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
AT_IDCard_2010	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
AT_ResidencePermit_2005	• ScoreGroup-PhotoAuthenticity
AT_ResidencePermit_2011	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity

	• ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
AU-ACT_DrivingLicense_2011	• ScoreGroup-PhotoAuthenticity
AU-NSW_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
AU-NT_DrivingLicense_2006	• ScoreGroup-PhotoAuthenticity
AU-QLD_DrivingLicense_2011	• ScoreGroup-PhotoAuthenticity
AU-QLD_DrivingLicense_2016	• ScoreGroup-PhotoAuthenticity
AU-SA_DrivingLicense_2014	• ScoreGroup-PhotoAuthenticity
AU-TAS_DrivingLicense_2015	• ScoreGroup-PhotoAuthenticity
AU-VIC_DrivingLicense_2009	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
AU-WA_DrivingLicense_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
AU-WA_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
BA_IDCard_2003	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
BA_IDCard_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity

	• ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
BE_DrivingLicense_2010	• ScoreGroup-PhotoAuthenticity
BE_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
BE_IDCard_2008	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
BE_IDCard_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
BG_DrivingLicense_2002	• ScoreGroup-PhotoAuthenticity
BG_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
BG_IDCard_2006	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding

	• ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
BG_IDCard_2010	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
BR_DrivingLicense_2017	• ScoreGroup-PhotoAuthenticity
BR_DrivingLicense_2019	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
BR_IDCard_2014	• ScoreGroup-PhotoAuthenticity
BY_DrivingLicense_2010	• ScoreGroup-PhotoAuthenticity
CA-AB_DrivingLicense_2009	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-BC_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-MB_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-NB_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity

CA-NB_IDCard_2020	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-NL_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-NS_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-NT_DrivingLicense_2005	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-NU_DrivingLicense_2009	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-ON_DrivingLicense_2007	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-PE_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-QC_DrivingLicense_2015	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-SK_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CA-YT_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
CH_DrivingLicense_2003	• ScoreGroup-PhotoAuthenticity
CH_IDCard_2003	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
CL_IDCard_2002	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding

	• ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
CL_IDCard_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
CN_IDCard_2004	• ScoreGroup-PhotoAuthenticity
CO_IDCard_2000	• ScoreGroup-BarcodesDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PhotoAuthenticity
CO_ResidencePermit_2016	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
CY_DrivingLicense_2015	• ScoreGroup-PhotoAuthenticity

CY_IDCard_2008	• ScoreGroup-PhotoAuthenticity
CY_IDCard_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
CZ_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
CZ_IDCard_2003	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
CZ_IDCard_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
DE_DrivingLicense_2004	• ScoreGroup-PhotoAuthenticity
DE_IDCard_2007	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding

	• ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
DE_IDCard_2010	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
DK_DrivingLicense_1997	• ScoreGroup-PhotoAuthenticity
DK_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
DO_IDCard_1998	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
DO_IDCard_2014	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
EE_DrivingLicense_2004	• ScoreGroup-PhotoAuthenticity

EE_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
EE_IDCard_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
ES_DrivingLicense_2004	• ScoreGroup-DamagedDocumentTest • ScoreGroup-PhotoAuthenticity • ScoreVal-PD_IdentificationNumber_Out-Mod23
ES_DrivingLicense_2013	• ScoreGroup-DamagedDocumentTest • ScoreGroup-PhotoAuthenticity • ScoreVal-PD_IdentificationNumber_Out-Mod23
ES_IDCard_2006	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-DamagedDocumentTest • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-PrintAttackTest • ScoreGroup-ReplayAttackTest • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text • ScoreVal-PD_IdentificationNumber_Out-Mod23
ES_IDCard_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-DamagedDocumentTest • ScoreGroup-MaterialAuthenticity

	• ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-PrintAttackTest • ScoreGroup-ReplayAttackTest • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text • ScoreVal-PD_IdentificationNumber_Out-Mod23 • ScoreVal-Photo_NFC
ES_ResidencePermit_2010	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-DamagedDocumentTest • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-PrintAttackTest • ScoreGroup-ReplayAttackTest • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text • ScoreVal-PD_IdentificationNumber_Out-Mod23
ES_ResidencePermit_2011	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-DamagedDocumentTest • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-PrintAttackTest • ScoreGroup-ReplayAttackTest • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Te

	xt • ScoreVal-PD_IdentificationNumber_Out-Mod23
ES_ResidencePermit_2020	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-DamagedDocumentTest • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text • ScoreVal-PD_IdentificationNumber_Out-Mod23
FI_DrivingLicense_1992	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
FI_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
FI_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
FI_IDCard_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
FI_IDCard_2017	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_I

	dentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
FR_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding
FR_IDCard_1994	• ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
GB_DrivingLicense-PL_1998	• ScoreGroup-PhotoAuthenticity
GB_DrivingLicense-PL_2007	• ScoreGroup-PhotoAuthenticity
GB_DrivingLicense-PL_2014	• ScoreGroup-PhotoAuthenticity
GB_DrivingLicense-PL_2015	• ScoreGroup-PhotoAuthenticity
GB_DrivingLicense_1998	• ScoreGroup-PhotoAuthenticity
GB_DrivingLicense_2007	• ScoreGroup-PhotoAuthenticity
GB_DrivingLicense_2014	• ScoreGroup-PhotoAuthenticity
GB_DrivingLicense_2015	• ScoreGroup-PhotoAuthenticity
GR_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
GT_IDCard_2009	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
HR_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity

HR_IDCard_2003	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
HR_IDCard_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
HU_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
HU_IDCard_2000	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
HU_IDCard_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text

	• ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
IE_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
IE_Passport_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
IS_DrivingLicense_2001	• ScoreGroup-PhotoAuthenticity
IS_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
IT_DrivingLicense_2000	• ScoreGroup-PhotoAuthenticity
IT_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
IT_IDCard_2004	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
IT_IDCard_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding

	• ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
IT_IDCard_2017	• ScoreGroup-PhotoAuthenticity
LI_DrivingLicense_2003	• ScoreGroup-PhotoAuthenticity
LI_IDCard_1995	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
LI_IDCard_2009	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
LT_DrivingLicense_2007	• ScoreGroup-PhotoAuthenticity
LT_DrivingLicense_2016	• ScoreGroup-PhotoAuthenticity
LT_IDCard_2002	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding

	• ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
LT_IDCard_2009	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
LU_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
LU_IDCard_2014	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
LV_DrivingLicense_2004	• ScoreGroup-PhotoAuthenticity
LV_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
LV_IDCard_2012	• ScoreGroup-BarcodesDecoding

	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
MC_IDCard_2009	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
MD_IDCard_2015	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
ME_IDCard_2008	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_Expirat

	ionDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
MK_IDCard_2007	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
MT_DrivingLicense_2003	• ScoreGroup-PhotoAuthenticity
MT_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
MT_IDCard_2002	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text
MT_IDCard_2014	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
MX_IDCard_2008	• ScoreGroup-BarcodesDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PhotoAuthenticity • ScoreGroup-ReplayAttackTest

MX_IDCard_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-ReplayAttackTest • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
MX_IDCard_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-ReplayAttackTest • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
MX_IDCard_2019	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
MY_IDCard_2012	• ScoreGroup-PhotoAuthenticity

NL_DrivingLicense_2006	• ScoreGroup-PhotoAuthenticity
NL_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
NL_DrivingLicense_2014	• ScoreGroup-PhotoAuthenticity
NL_IDCard_2011	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
NL_IDCard_2014	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
NO_DrivingLicense_1998	• ScoreGroup-PhotoAuthenticity
NO_DrivingLicense_2007	• ScoreGroup-PhotoAuthenticity
NO_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
NZ_DrivingLicense_2007	• ScoreGroup-PhotoAuthenticity
PA_IDCard_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
PE_IDCard_2007	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity

	• ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
PE_IDCard_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-MaterialAuthenticity • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
PE_IDCard_2020	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
PH_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
PH_IDCard-PO_2016	• ScoreGroup-BarcodesDecoding

	• ScoreGroup-PhotoAuthenticity
PH_IDCard_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
PH_IDCard_2015	• ScoreGroup-PhotoAuthenticity
PH_IDCard_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
PL_DrivingLicense_1999	• ScoreGroup-PhotoAuthenticity
PL_DrivingLicense_2004	• ScoreGroup-PhotoAuthenticity
PL_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
PL_IDCard_2001	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
PL_IDCard_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
PL_IDCard_2019	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text

	• ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
PT_DrivingLicense_1999	• ScoreGroup-PhotoAuthenticity
PT_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
PT_IDCard_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
PY_IDCard_2007	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
PY_IDCard_2009	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text

	• ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
RO_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
RO_IDCard_2009	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
RS_IDCard_2008	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
RU_DrivingLicense_2011	• ScoreGroup-PhotoAuthenticity
SE_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
SE_DrivingLicense_2016	• ScoreGroup-PhotoAuthenticity
SE_IDCard_2012	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text

	• ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
SG_IDCard_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
SI_DrivingLicense_2009	• ScoreGroup-PhotoAuthenticity
SI_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
SI_IDCard_1998	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
SK_DrivingLicense_2008	• ScoreGroup-PhotoAuthenticity
SK_DrivingLicense_2013	• ScoreGroup-PhotoAuthenticity
SK_IDCard_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
TR_IDCard_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_M

	RZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
UA_IDCard_2016	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
US-AK_DrivingLicense_2005	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AK_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AK_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AL_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AL_IDCard_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AR_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AR_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AZ_DrivingLicense_1990	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AZ_DrivingLicense_1996	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-AZ_DrivingLicense_2004	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity

US-AZ_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-CA_DrivingLicense_2008	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-CA_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-CO_DrivingLicense_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-CO_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-CT_DrivingLicense_2009	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-CT_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-DC_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-DE_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-DE_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-FL_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-FL_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-GA_DrivingLicense_2007	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-GA_DrivingLicense_2012	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-HI_DrivingLicense_2012	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-HI_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-IA_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity

US-IA_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-ID_DrivingLicense_2004	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-ID_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-ID_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-IL_DrivingLicense_2007	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-IL_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-IN_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-IN_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-KS_DrivingLicense_2004	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-KS_DrivingLicense_2012	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-KS_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-KY_DrivingLicense_2012	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-KY_DrivingLicense_2019	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-LA_DrivingLicense_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-LA_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-LA_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MA_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity

US-MA_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MD_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MD_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-ME_DrivingLicense_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MI_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MN_DrivingLicense_2004	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MN_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MO_DrivingLicense_2004	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MO_DrivingLicense_2012	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MS_DrivingLicense_2001	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MS_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MT_DrivingLicense_2000	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-MT_DrivingLicense_2008	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NC_DrivingLicense_2007	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NC_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-ND_DrivingLicense_2006	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-ND_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity

US-NE_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NH_DrivingLicense_2006	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NH_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NJ_DrivingLicense_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NM_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NM_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NV_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-NY_DrivingLicense_2008	• ScoreGroup-BarcodesDecoding • ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
US-NY_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-OH_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-OH_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-OH_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-OK_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-OR_DrivingLicense_2007	• ScoreGroup-BarcodesDecoding

	• ScoreGroup-PhotoAuthenticity
US-OR_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-PA_DrivingLicense_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-PA_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-RI_DrivingLicense_2008	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-RI_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-SC_DrivingLicense_2011	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-SC_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-SD_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-TN_DrivingLicense_2003	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-TN_DrivingLicense_2012	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-TX_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-TX_IDCard_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-UT_DrivingLicense_2006	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-UT_DrivingLicense_2016	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-VA_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-VA_IDCard_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-VT_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding

	• ScoreGroup-PhotoAuthenticity
US-VT_DrivingLicense_2018	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WA_DrivingLicense_2010	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WA_DrivingLicense_2017	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WA_DrivingLicense_2019	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WI_DrivingLicense_2005	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WI_DrivingLicense_2012	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WI_DrivingLicense_2015	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WV_DrivingLicense_2005	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WV_DrivingLicense_2013	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US-WY_DrivingLicense_2014	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US_IDCard-MilitaryRR_1993	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US_IDCard-MilitaryRS_1993	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
US_IDCard-MilitaryRT_1993	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
UY_IDCard_1999	• ScoreGroup-BarcodesDecoding • ScoreGroup-PhotoAuthenticity
UY_IDCard_2015	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding • ScoreRel-DD_ExpirationDate_FrontNoFlash-DD_ExpirationDate_MRZ-Text • ScoreRel-PD_BirthDate_FrontNoFlash-PD_BirthDate_M

	RZ-Text • ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text • ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text • ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text
VE_IDCard_2011	• ScoreGroup-PhotoAuthenticity
XX_Passport_YYYY	• ScoreGroup-DD_ExpirationDate-MRZDecoding • ScoreGroup-PD_BirthDate-MRZDecoding • ScoreGroup-PhotoAuthenticity • ScoreGroup-SD_MRZ-MRZDecoding

11. Annex 3: Document coverage

All the supported documents are specified in the document named *"Document validation user guide Identidas"*.

12. Annex 4: Changelog History

Validas 2021Q1

Validas additions and improvements

- Add a random numeric challenge generation to require the user to perform a random action for the onboarding process to be successful. This feature allows to comply with the Ministerial Order regarding remote identification methods for the issuance of qualified electronic certificates of 2021.
- New validation global score which indicates the result of validation process. For more detailed information refer to section 3.4
- A new score named ValidasScoreVideoVsDocument is generated when the comparison of the document shown in the selfie video and the document previously analysed is requested. This feature allows to comply with the regulatory requirement of the CNBV (México). Art. 51. Bis 6 Fracción VII -c- (https://dof.gob.mx/nota_detalle.php?codigo=5602349&fecha=12/10/2020)

Validas fixes

- The integrity score is not taken into account for the global validation score calculation when it is not present

IDentidas additions and improvements

- Add face photo color manipulation detection algorithm to all documents except for Germany driving license (DE_DrivingLicense_2013).
- Reduction of false negatives in photo color manipulation detection algorithm. A reduction of :
    - 9% on Italy document (IT_IDCard_2017)
    - 22% on Peruvian document (PE_IDCard_2007)
    - 3% on Argentina document (AR_IDCard_2012).
- Reduction of false negatives from 3% to 1.5% in replay attacks for Mexico documents (MX).
- Improve broken document detection by 8% for Spain documents (ES).
- Photo replacement lever is now activated by default in Colombian document (CO_IDCard_2000).

Antispoofing

- Add a new Photo Replacement detection model. This measure allows detecting facial photo manipulation in ID cards. This measure is available for native and web mobile platforms. With a precision of 12% FP and 1.5% FN.

  - Argentina (AR_IDCard_2009, AR_IDCard_2012)
  - Bulgaria (BG_DrivingLicense_2002, BG_DrivingLicense_2013, BG_IDCard_2006, BG_IDCard_2010)
  - Switzerland (CH_DrivingLicense_2003, CH_IDCard_2003)
  - Colombia (CO_ResidencePermit_2016)
  - Czechia (CZ_DrivingLicense_2013, CZ_IDCard_2003, CZ_IDCard_2014)
  - Germany (DE_DrivingLicense_2004, DE_DrivingLicense_2013, DE_IDCard_2007, DE_IDCard_2010)
  - France (FR_DrivingLicense_2013, FR_IDCard_1994)
  - United Kingdom (GB_DrivingLicense_1998, GB_DrivingLicense_2007, GB_DrivingLicense_2014, GB_DrivingLicense_2015, GB_DrivingLicense-PL_1998, GB_DrivingLicense-PL_2007, GB_DrivingLicense-PL_2014, GB_DrivingLicense-PL_2015)
  - Croatia (HR_DrivingLicense_2013, HR_IDCard_2003, HR_IDCard_2015)
  - Italy (IT_DrivingLicense_2000, IT_DrivingLicense_2013, IT_IDCard_2004, IT_IDCard_2016)
  - Mexico (MX_IDCard_2008, MX_IDCard_2019)
  - Peru (PE_IDCard_2007, PE_IDCard_2013, PE_IDCard_2020)
  - Poland (PL_DrivingLicense_1999, PL_DrivingLicense_2004, PL_DrivingLicense_2013, PL_IDCard_2001, PL_IDCard_2015, PL_IDCard_2019)
  - Portugal (PT_DrivingLicense_1999, PT_DrivingLicense_2013, PT_ID
  - Card_2015)
  - Romania (RO_DrivingLicense_2013, RO_IDCard_2009)
  - Slovakia (SK_DrivingLicense_2008, SK_DrivingLicense_2013, SK_IDCard_2015)
  - Uruguay (UY_IDCard_2015)
- Add a new Photo Replacement detection mode to all Spain id documents (ES_IDCard_2006, ES_IDCard_2015, ES_ResidencePermit_2010, ES_ResidencePermit_2011, ES_ResidencePermit_2020) in the web mobile platform. With a precision of 12% FP and 1.5% FN.

- Improve Photo Replacement detection in Spain residence permit (ES_ResidencePermit_2010). Reduction in FN from 30% to 2%. Total precision 2% FN and 25% FP.
- Improve Photo Replacement detection in Mexican documents (MX_IDCard_2014). Reduction in FN from 10% to 1.5%. Total precision 1.5 % FN and 15% FP.
- Add ColorAuthenticity node and score to Brazil documents (BR_ID_2014, BR_DL_2017) and Italian documents (IT_IDCard_2017 paper document) in order to detect black and white documents photocopies.
- Add replay attack detection to credential type G (MX_IDCard_2019). A 2% of authentic documents will be rejected. Precision of replay in Mexican documents, 25% FP % and 2% FN.
- Reduce false positives of ScoreGroup-MaterialAuthenticity Score for Spain IDCards and Residence permits documents, in 5%.
- Improve identification number security by calculating control digit (mod11) on Peruvian documents (PE_IDCard_2013 and PE_IDCard_2020).

Document Coverage

- New Colombian Document, Cédula de Identidad 2020(CO_IDCard_2020).
- Add a new document type (HealthCard) and a new Italian document health care card (IT_HealthCard_2004). This new document is integrated into the country classification group: IT

Documental Features

- Add issuing country as an output node for all the documents following the ISO 3 chars code.
- Read special characters in the OCR of all document types. (À, È, Ì, Ò, Ù, Ñ, …..)
- Add birthdateIdentificationNumber node to UK driving licenses (GB_DL) and add it to the relations scores.
- Add issuing country data validity score. DEU added to our ISO countries list allowing us to have better-issuing country outputs and scores on German(DE) documents.
- Add civil status as an output node for Peruvian document (PE_IDCard_2007).
- New error when front no flash or back no flash images are blurred. If the image quality is too low an error with status code 400 is raised.
- Add ScoreRel-DD_DocumentNumber_FrontNoFlash-DD_DocumentNumber_MRZ-Text **lever** to the following documents:
    - Portugal (PT_IDCard_2015)
    - Germany (DE_IDCard_2010, DE_IDCard_2007)
    - Estonia (EE_IDCard_2011)
    - France (FR_IDCard_1994)
    - Hungary (HU_IDCard_2015, HU_IDCard_2000)
    - Ireland (IE_Passport_2015)
    - Italy (T_IDCard_2016, IT_IDCard_2004)

  - Luxembourg (LU_IDCard_2014)
  - Switzerland (CH_IDCard_2003)
  - Liechtenstein (LI_IDCard_2009, LI_IDCard_1995)
  - Austria (AL_IDCard_2009, AT_IDCard_2002, AT_ResidencePermit_2011)
  - Bosnia (BA_IDCard_2003, BA_IDCard_2013)
  - Belgium (BE_IDCard_2010, BE_IDCard_2008)
  - Bulgaria (BG_IDCard_2010, BG_IDCard_2006)
  - Cyprus (CY_IDCard_2015)
  - Czechia (CZ_IDCard_2003)
  - Dominican Republic (DO_IDCard_2014)
  - Spain (ES_ResidencePermit_2011, ES_IDCard_2006, ES_ResidencePermit_2020, ES_ResidencePermit_2010, ES_IDCard_2015)
  - Finland (FI_IDCard_2011)
  - Croatia (HR_IDCard_2015)
  - Lithuania (LT_IDCard_2002, LT_IDCard_2009)
  - Latvia (LV_IDCard_2012)
  - Moldova (MD_IDCard_2015)
  - Montenegro (ME_IDCard_2008)
  - North Macedonia (MK_IDCard_2007)
  - Malta (MT_IDCard_2002, MT_IDCard_2002)
  - Netherlands (NL_IDCard_2014, NL_IDCard_2011)
  - Poland (PL_IDCard_2019)
  - Romania (RO_IDCard_2009)
  - Serbia (RS_IDCard_2008)
  - Sweden (SE_IDCard_2012)
  - Slovenia (SI_IDCard_1998)
  - Slovakia (SK_IDCard_2015)
  - Turkey (TR_IDCard_2016)
  - Ukraine (UA_IDCard_2016)
  - Croatia (HR_IDCard_2003)
  - Monaco (MC_IDCard_2009)
  - United States of America (US-NY_DrivingLicense_2008)
  - Argentina (AR_IDCard_2009, AR_IDCard_2012)
  - Paraguay (PY_IDCard_2007, PY_IDCard_2009)
  - Mexico (MX_IDCard_2013, MX_IDCard_2014, MX_IDCard_2019)
  - Generic Passport (XX_Passport_YYYY)
- IMPORTANT: These scores have been removed:
  - ScoreGroup-SD_AntiSpoofing-MaterialAuthenticity, Argentina, Colombia, Spain, Mexico, and Peru documents (AR, CO, ES, MX, PE)
  - ScoreGroup-SD_OVI-MaterialAuthenticity, Spain documents (ES)
  - ScoreGroup-SD_Kinegram-MaterialAuthenticity, Spain documents (ES)
  - ScoreGroup-SD_CLI-MaterialAuthenticity, Spain documents (ES)

- Improve separation of the title field in the Austrian(AT) documents. Now the title field is read regardless of its position in the name and last name. And also when the person has more than two titles.
    - IMPORTANT: These scores have been removed from the document AT_IDCard_2010:
        - ScoreVal-PD_Title_FrontNoFlash-Blacklist
        - ScoreVal-PD_Title_FrontNoFlash-Blacklist-2
        - ScoreVal-PD_Title_FrontNoFlash-Blacklist-3
        - ScoreVal-PD_Title_FrontNoFlash-Blacklist-4
        - ScoreVal-PD_Title_Out-MinimumLength
- Read '-' character in name and last name nodes in Austrian (AT) documents.
- Return nationality of all Documents using the 3 chars format (except AT_ResidencePermit_2005 and "EXTRANJERO" case on VE documents)
- Renamed France ID card (FR_IDCard_1994) ExpeditionPlace node to AuthorityCode.
- Improve image detection process. Add a corrector of 180º rotated image available in TD1 doc_types (retrieve 85% of rotated images). Improve the detection and cropping of documents by 8%.
- Improving OCR reading in Address Municipality and Address State node in Spain residence permit (ES_ResidencPermit_2010) by reducing CER by 20%.
- Correct Address node output in Italian document (IT_DL_2000). Now the MunicipalityAddress node shows just the city of residence and the AddressStreet node shows the city of residence and street.

Funnel improvement

- Improve reading in birthdate under the following formats dd-MM-yyyy and dd-MM-yy in the United Kingdom driving license (GB_DL_2007).
- Improve Argentina documents (AR) funnel:
    - Increase the number of approved documents by 5%.
    - Decrease CER by 0,7%. In the nodes:
        - PD_AddressStreet_Out
        - PD_BirthPlaceMunicipality_Out
        - OD_CUIL_Out
    - ***IMPORTANT: Some nodes have been removed from AR documents and also all the scores related to them:***
        - ***DD_EstablishmentDate_Out***
        - ***PD_Case_Out***
        - ***PD_EntranceDate_Out***
        - ***PD_Provission_Out***
    - ***NOTE: The scoreGroups: ScoreGroup-DataRecurrenModifier and ScoreGroup-MRZDecodingModifier have been removed from AR documents***

- Activate by default the lever: ScoreVal-PD_IdentificationNumber_Out-Mod23 in Spain documents (ES_IDCard_2006, ES_IDCard_2015, ES_ResidencePermit_2010, ES_ResidencePermit_2011, ES_ResidencePermit_2020)
- Update neural auto-classification document type in Spain documents (add ES_ResidencePermit_2020) improve accuracy from 99% to 99.48%.
- Improve the reading of the ExpeditionDate node in the Austrian residence permit (AT_ResidencePermit_2011) by reducing 1% in CER.
- Improve the OCR reading of the name and last name nodes out by adding the new special characters to the reading. This will not affect any of the relation scores by applying the transliterations in MRZ, NFC, PDF417, and QRCode nodes. For example, if someone is called IÑAKI and INAKI comes to the NFC, the score (VIZ-NFC) will be 1, and the OCR output will be IÑAKI.
- Improve CAN relation score MRZ-VIZ in cases where the CAN doesn't exist in the MRZ, in Austrian residence permit (AT_ResidencePermit_2011).

IDentidas fixes

- Validation of DD_DocumentNumber_Out field in NL, PL and LT.
- Reduce BrokenDocumentDetector analysis time. This will significantly affect and improve ES documents processing time.
- Fixed random errors in GET scores categories endpoint.
- Fix IdentificationNumber checksums in XX_Passport_YYYY
- Fix ubigeos code to Department/Province/District conversion for the Peruvian (PE) documents using the RENIEC ubigeos codes standard.
- Fix issuing country node region on Finland document (FI_DrivingLicense_2010).
- Fixed barcode reading error 500, when decoding is not what is expected.
- Fix expiration date extraction of the PDF417 in Peruvian document (PE_IDCard_2007).
- Fix ubigeos codes translation on Peruvian documents (PE_IDCard_2013 and PE_ID_2020) following the RENIEC standard.
- Update available-types API endpoint response. For each document, the field "required_image_sides" includes the minimum document images needed and the "image_types" field shows the available document image options (including flash).
- Fix birthdate extraction when the identification number is empty or in the wrong format in the United Kingdom driving license (GB_DL).
- In order to be ICAO compliant (MRZ definition standard: https://www.icao.int/publications/Documents/9303_p3_cons_en.pdf) all of the following documents have been fixed naming properly the DocumentNumber concept, as the standard says. To do so four main modifications have been made:
    - Generate a **new node DD_DocumentNumber_Out**. In these documents there was a PD_IDentificationNumber_Out, so now it has been duplicated. Now the nodes DD_DocumentNumber_Out and PD_IDentificationNumber_Out have the same value. ***IMPORTANT: the PD_IDentificationNumber_Out will be removed in the 2021Q4***.

- List of modified documents:
  - Germany (DE_IDCard_2010, DE_IDCard_2007)
  - Estonia (EE_IDCard_2011)
  - France (FR_IDCard_1994)
  - Hungary (HU_IDCard_2015, HU_IDCard_2000)
  - Ireland (IE_Passport_2015)
  - Italy (IT_IDCard_2016, IT_IDCard_2004)
  - Luxembourg (LU_IDCard_2014)
  - Switzerland (CH_IDCard_2003)
  - Liechtenstein (LI_IDCard_2009, LI_IDCard_1995)
  - Croatia (HR_IDCard_2003)
  - Monaco (MC_IDCard_2009)
  - Belgium (BE_IDCard_2008)
  - Austria (AT_IDCard_2002)
  - United States of America (US-NY_DrivingLicense_2008)
- **Important considerations**:
  - ***In these documents the following scores disappear:***
    - *ScoreGroup-PD_IdentificationNumber-DataValidity*
    - *ScoreVal-PD_IdentificationNumber_Out-Regular*
    - *ScoreGroup-PD_IdentificationNumber-MRZDecoding*
    - *ScoreRel-PD_IdentificationNumber_Checksum_Calc_MRZ-PD_IdentificationNumber_Checksum_MRZ-Text*
    - *ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text*
  - In these documents the following scores appear:
    - ScoreGroup-DD_DocumentNumber-DataValidity
    - ScoreVal-DD_DocumentNumber_Out-Regular
    - ScoreGroup-DD_DocumentNumber-MRZDecoding
    - ScoreRel-DD_DocumentNumber_Checksum_Calc_MRZ-DD_DocumentNumber_Checksum_MRZ-Text
    - ScoreRel-DD_DocumentNumber_FrontNoFlash-DD_DocumentNumber_MRZ-Text

- **Swap** the nodes **DD_DocumentNumber_Out and PD_IDentificationNumber_Out** (nodes and scores). In the following documents the DocumentNumber concept was named as IdentificationNumber and vice versa:
  - List of modified documents:
    - Portugal (PT_IDCard_2015)
    - Argentina (AR_IDCard_2009, AR_IDCard_2012)
    - Malta (MT_IDCard_2002)
    - Generic Passport (XX_Passport_YYYY)
    - Paraguay (PY_IDCard_2007)
    - Paraguay (PY_IDCard_2009)
  - **Important considerations**:

- ***In these documents the following scores disappear:***
  - *ScoreGroup-PD_IdentificationNumber-DataValidity*
  - *ScoreVal-PD_IdentificationNumber_Out-Regular*
  - *ScoreGroup-PD_IdentificationNumber-MRZDecoding*
  - *ScoreRel-PD_IdentificationNumber_Checksum_Calc_MRZ-PD_IdentificationNumber_Checksum_MRZ-Text*
  - *ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text*
- In these documents the following scores appear:
  - ScoreGroup-DD_DocumentNumber-MRZDecoding
  - ScoreRel-DD_DocumentNumber_Checksum_Calc_MRZ-DD_DocumentNumber_Checksum_MRZ-Text

- Generate a **new node DD_DocumentNumber_Out**. In this documents there was a OD_IDCredentialCode_Out, so now it has been duplicated. Now the nodes DD_DocumentNumber_Out and OD_IDCredentialCode_Out have the same value. **IMPORTANT: the OD_IDCredentialCode_Out will be removed in the 2021Q4**.
  - List of modified documents:
    - Mexico (MX_IDCard_2013, MX_IDCard_2014, MX_IDCard_2019)
  - Important considerations:
    - ***In these documents the following scores disappear:***
      - *ScoreGroup-OD_IDCredentialCode-DataValidity*
      - *ScoreVal-OD_IDCredentialCode_Out-Regular*
      - *ScoreGroup-OD_IDCredentialCode-MRZDecoding*
      - *ScoreRel-OD_IDCredentialCode_Checksum_Calc_MRZ-OD_IDCredentialCode_Checksum_MRZ-Text*
      - *ScoreRel-OD_IDCredentialCode_FrontNoFlash-OD_IDCredentialCode_MRZ-Text*
    - In these documents the following scores appear:
      - ScoreGroup-DD_DocumentNumber-DataValidity
      - ScoreVal-DD_DocumentNumber_Out-Regular
      - ScoreGroup-DD_DocumentNumber-MRZDecoding
      - ScoreRel-DD_DocumentNumber_Checksum_Calc_MRZ-DD_DocumentNumber_Checksum_MRZ-Text
      - ScoreRel-DD_DocumentNumber_FrontNoFlash-DD_DocumentNumber_MRZ-Text
- In Austrian documents (AT_IDCard_2010) the DD_DocumentNumber_Out node is now named as DD_RegisterNumber_Out. And the PD_IdentificationNumber_Out node as DD_DocumentNumber_Out. In the Austrian residence permit (AT_residencePermit_2011) the PD_IdentificationNumber_Out node now is named as DD_RegisterNumber_Out. **IMPORTANT: the PD_IDentificationNumber_Out will be removed in the 2021Q4**.

- List of modified documents:
  - Austria (AT_IDCard_2010, AT_ResidencePermit_2011)
- Important considerations:
  - ***In these documents the following scores disappear:***
    - *ScoreGroup-PD_IdentificationNumber-DataValidity*
    - *ScoreVal-PD_IdentificationNumber_Out-Regular*
    - *ScoreGroup-PD_IdentificationNumber-MRZDecoding*
    - *ScoreRel-PD_IdentificationNumber_Checksum_Calc_MRZ-PD_IdentificationNumber_Checksum_MRZ-Text*
    - *ScoreRel-PD_IdentificationNumber_FrontNoFlash-PD_IdentificationNumber_MRZ-Text*
  - In these documents the following scores appear:
    - ScoreGroup-DD_RegisterNumber-DataValidity
    - ScoreVal-DD_RegisterNumber_Out-Regular
    - ScoreGroup-DD_DocumentNumber-MRZDecoding
    - ScoreRel-DD_DocumentNumber_Checksum_Calc_MRZ-DD_DocumentNumber_Checksum_MRZ-Text
    - ScoreRel-DD_DocumentNumber_FrontNoFlash-DD_DocumentNumber_MRZ-Text

IDentidas deprecations

- API GET /v1/document_types is going to be deprecated in 2021Q4.

Face Biometry additions and improvements

- New biometric model which reduces false positive and false negative rates, and improves the accuracy on different demographic cases (Caucasian, African, Indian, Asian). The model improves the accuracy of selfie-mode from 99.8% to 99.9% and the funnel of document-mode is improved by two points maintaining the same security level, obtaining TPR=2.43% @ FPR=0.62% at 0.7 threshold. The new model is identified by:
  - Model hash: 904fa9ef6e71ef541f20a95d3dc97821b7af43b8cd2c1bb3eb09df15
  - Model tag: 20210203
- An update of the Selfie-Alive Pro (SAP) use case (/challenges/analysis/video-photo) decreasing the time of the operation in a 26%. The system is calibrated at threshold 0.7 for BPCER=2.7% and APCER=0.9%.
- An update of the passive AS solution (/authenticity/photo) calibrated at threshold 0.7 for BPCER=3.2% and APCER=7.8%, reducing a 50% the APCER of the previous das-Face version. The system requires additional 300ms per query (a total of 1185ms per query).

Face Biometry deprecations

- The biometric model is marked as deprecated, enforcing deprecation for the 2021 Q3 release. The model is identified by:
    - model hash: 3a9e9d5ffd5de4c212c2aff26eeca523fb69754e604894520b32e4ed
    - model tag: 20190813

Validas 2020Q4

General deprecations

The optional parameters of the PUT /video request, named "videoMetadata" and "videoXml" will be deprecated in 2020Q4 release. Please update your integrations with vali-Das by that date.

Validas additions

- New validation integrity scores which indicates if the SDK-validas integrity contract has been satisfied to prevent image tampering
- Selfie alive pro feature available which allows to upload a selfie video with a challenge, to do the face verification

Validas improvements

- Liveness score calculation when video is uploaded now takes anti-spoofing algorithm into account

IDentidas additions and improvements

- New added documents:
    - Philippines
        - PH_DrivingLicense_2017
        - PH_IDCard_2016
        - PH_IDCard_2015
        - PH_IDCard_2011
        - PH_IDCard-PO_2016
    - Singapore
        - SG_IDCard_2011
    - Uruguay
        - UY_IDCard_1999

- OCR improvements:
  - “ß” character is readed in Austrian IDs and DLs
  - Read title as a separate field (PD_Title_Out) in AT_IDCard_2002, AT_IDCard_2010, AT_DrivingLicense_2006 and AT_DrivingLicense_2014.
  - AT last names
  - AT titles
  - CL municipalities
  - CO departments
  - CO BirthPlaceMunicipality field
  - IT catastral codes countries
  - IT catastral codes municipalities
  - IT municipalities
  - UY municipalities

- Anti-spoofing improvements:
  - Photo replacement detection improved in Spanish and Mexican IDs.
  - Photo replacement detection in Italian, Argentinian and Peruvian documents, as well as Colombian ID and 2016 Residence permit.
  - Detection of broken documents in Spanish documents (DLs, IDs and RPs).
  - Replay-attack (photo to screen) detection improved in Mexican IDs.

- Expedition date estimation when it is missing in the document.
- Barcode decodification in all Canada documents.
- Added Italy fiscal code recurrences.
- New score modifiers:
  - Material authenticity modifier for Austria, Colombia and Peru (not active by default)
  - "ScoreVal-PD_IdentificationNumber_Out-Mod23", "ScoreRel-PD_Name_FrontNoFlash-PD_Name_MRZ-Text" and "ScoreRel-PD_LastName_FrontNoFlash-PD_LastName_MRZ-Text" in all the documents supporting those scores.
  - Unification of scores referring to codes and creation of the “ScoreGroup-BarcodesDecoding” modifier.

- Funnel improvement and security detection in Mexico ID cards
- Return empty ExpeditionData_generated when is greater than the current date.
- Better detection of the face photo within the document.

IDentidas fixes

- Global Checksum of MRZ DO_IDCard_2014 was not correctly calculated
- PDF417-VIZ-DataRecurrence wrongly calculated when PDF417 was not decoded in the USA and Canadian documents.
- Last names for Spanish, Mexican and Portuguese documents were not split when the dictionary was used.
- Inadequate error response when posting a flash image in validation and ocr modes
- Inadequate error response in GET NFC endpoint for documents without MRZ nor NFC

Face Biometry additions

- New Selfie Alive Pro
    - The system performs with APCER=0.1% and BPCER=12.9%.
    - Supports videos recording a sequence of random head movements.
    - This solution is in compliance with ISO 30107-3 PAD level 1, as tested by iBeta.

Face Biometry improvements

- AS passive live detection (for both regular selfie and former selfie-alive)
    - Improves replay-attacks APCER from 27% to 5.3% from previous release.

Validas 2020Q3

General deprecations

The optional parameters of the PUT /video request, named "videoMetadata" and "videoXml" will be deprecated in 2020Q4 release. Please update your integrations with vali-Das by that date.

V1 document types are no longer available in this release (2020Q3). Please check your integrations.

- **V1 identifiers** for ES, AR, MX and Passports have been unified (with V2) and are deprecated in this version. Changes:
    - DNI20 → ES_IDCard_2006
    - DNI30 → ES_IDCard_2015
    - NIE2010 → ES_ResidencePermit_2010
    - NIE2011 → ES_ResidencePermit_2011

- IFE2008 → MX_IDCard_2008
- IFE2013 → MX_IDCard_2013
- IFE2014 → MX_IDCard_2014
- ARG2009 → AR_IDCard_2009
- ARG2012 → AR_IDCard_2012
- Passport → XX_Passport_YYYY
- MYS2001 → MY_IDCard_2012

Validas additions

- Support to flow Document+Videoselfie (without selfie). An appropriately selected frame from de video is used as a selfie photo for the corresponding biometric comparisons.
- New “POST /validation/document” endpoint which allows to initiate the validation process and upload the document obverse and, optionally, upload the document obverse with flash and upload the reverse, on a single call.

Validas improvements

- More detailed video error response when try to send wrong video vp6 encoded
- Minor security improvements
- Improved by 5 points the percentage of selfie vs document biometric comparisons for Mexican documents

IDentidas additions

- New added documents
  Canada
  - CA-NB_DrivingLicense_2017
  - CA-NB_IDCard_2020

  Dominican Republic
  - DO_IDCard_1998
  - DO_IDCard_2014

  Spain
  - ES_ResidencePermit_2020

  Britain
  - GB_DrivingLicense-PL_1998
  - GB_DrivingLicense-PL_2007
  - GB_DrivingLicense-PL_2014
  - GB_DrivingLicense-PL_2015

  Italy
  - IT_IDCard_2017

  Malaysia
  - MY_IDCard_2012

México
  - MX_IDCard_2019

Perú
  - PE_IDCard_2020

USA
  - US_IDCard-MilitaryRS_1993
  - US_IDCard-MilitaryRT_1993
  - US_IDCard-MilitaryRR_1993
  - US-AL_IDCard_2013
  - US-NY_DrivingLicense_2008
  - US-OH_DrivingLicense_2013
  - US-TX_IDCard_2016
  - US-VA_IDCard_2018

- Added Postal Code out node in all GB_DL documents.
- Now two-dimensional codes in Chilean documents are decoded.
- Added separate lastnames from credentials D, E and F of México, in the next two nodes PD_LastName1_Out and PD_LastName1_Out.

IDentidas improvements

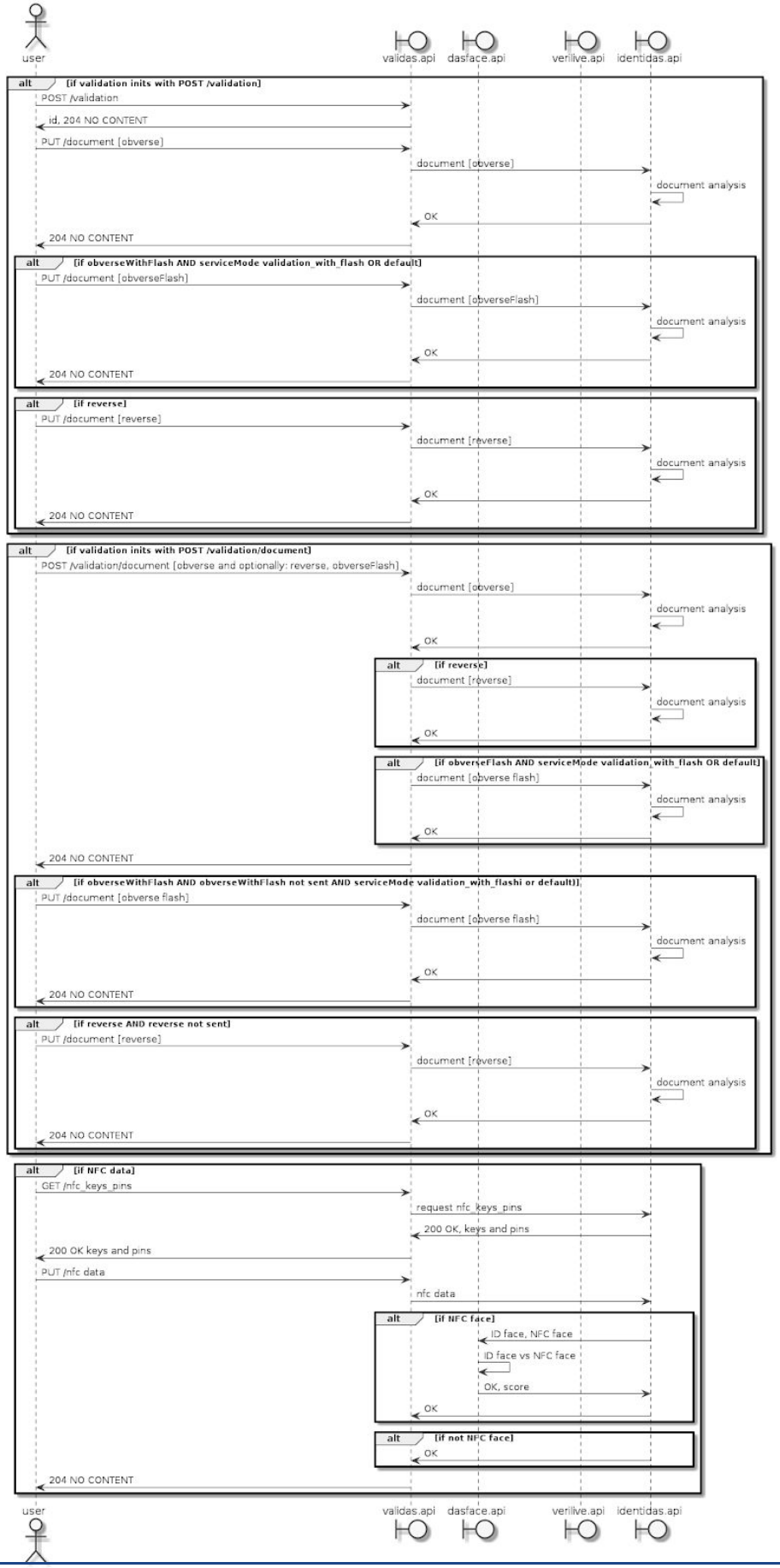
- OCR refinement in the next US documents:
  USA
  - US-IA_DrivingLicense_2013
  - US-ID_DrivingLicense_2010
  - US-MA_DrivingLicense_2018
  - US-MD_DrivingLicense_2016
  - US-ME_DrivingLicense_2011
  - US-MI_DrivingLicense_2017
  - US-MO_DrivingLicense_2012
  - US-MT_DrivingLicense_2000
  - US-NH_DrivingLicense_2017
  - US-NY_DrivingLicense_2017
  - US-OH_DrivingLicense_2018
  - US-PA_DrivingLicense_2017
  - US-RI_DrivingLicense_2008
  - US-RI_DrivingLicense_2018
  - US-VA_DrivingLicense_2018
  - US-VA_IDCard_2018
  - US-WI_DrivingLicense_2012
  - US-WI_DrivingLicense_2015
  - US-WV_DrivingLicense_2013
  - US-WY_DrivingLicense_2014
- Recalibrate Material Authenticity Score in ES documents reducing 6% the false negative rate.

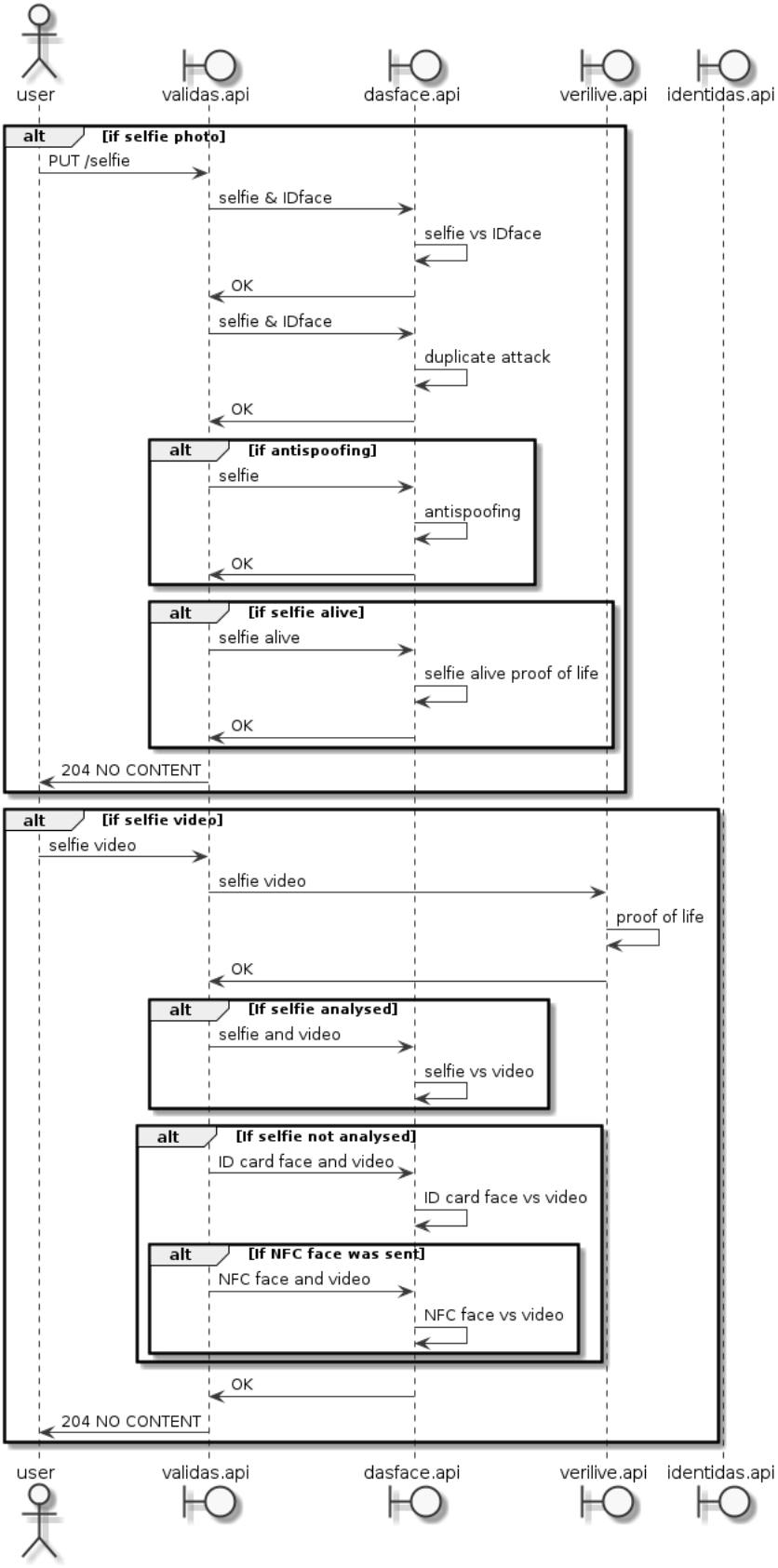
- Print and Replay Attack modifiers are now active by default for Documents: ES_IDCard_2006 and ES_IDCard_2015. Previous behaviour (disabled) can be restored by de-activating the modifier via API.

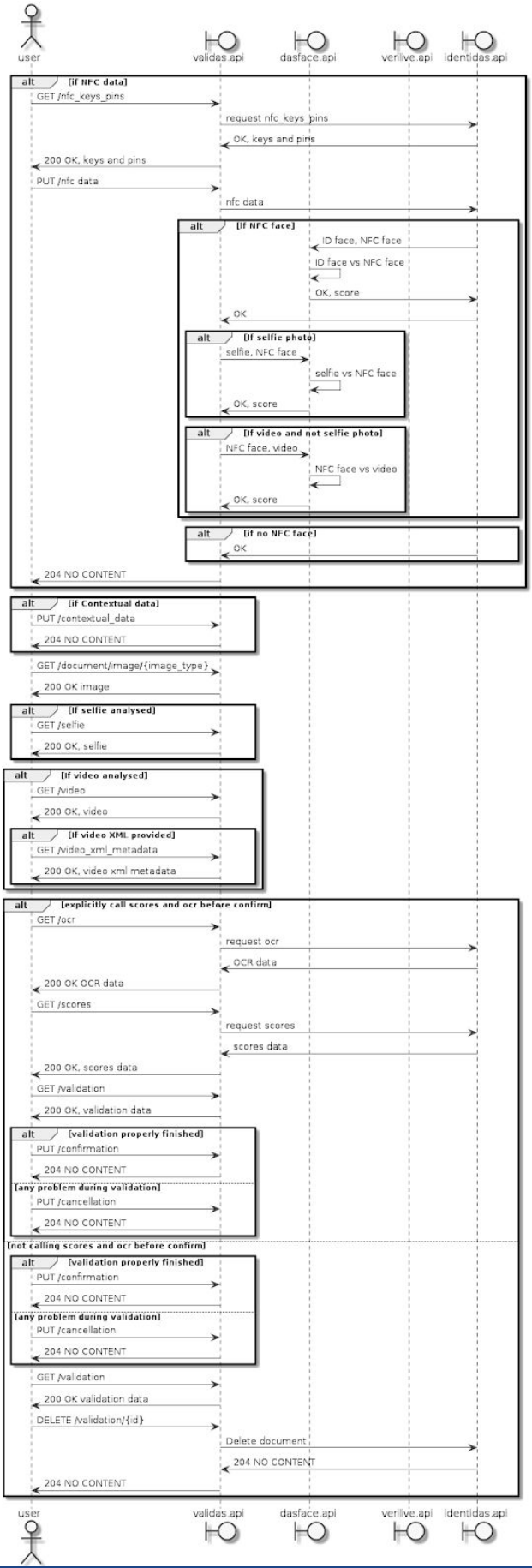
IDentidas fixes

- Checksum MRZ in FR_IDCard_1994 document is now correctly calculated.
- Updated US eye and hair color dictionaries to include missing values.
- Missing DocumentNumber NFC, MRZ, VIZ ScoreRel is now added to scores in ES_IDCard_2015 document.

13. Annex 5: Sequence Diagram







14. Annex 6: vali-Das onpremise Docker Installation

See the attached “valiDas microservice API v1 and Deployment Instructions” PDF.