

Results for the 2025 Remote Identity Validation Rally Identity Document Validation Track

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Use of These Data

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2025 Remote Identity Validation Rally Identity Document Validation Overview

The 2025 Remote Identity Validation Rally (RIVR) challenges industry to deliver secure, accurate, and easy-to-use remote identity validation technologies to combat identity fraud and allow users to assert their identity online. This technology is used for applying to government services, opening bank accounts, verifying social media accounts, and other purposes. The RIVR evaluated the ability of systems to authenticate identity documents, assess the ‘liveness’ of selfie photos, and verify identities using selfie and document images captured with smartphones. This report provides the outcomes of the Identity Document Validation track in the RIVR.

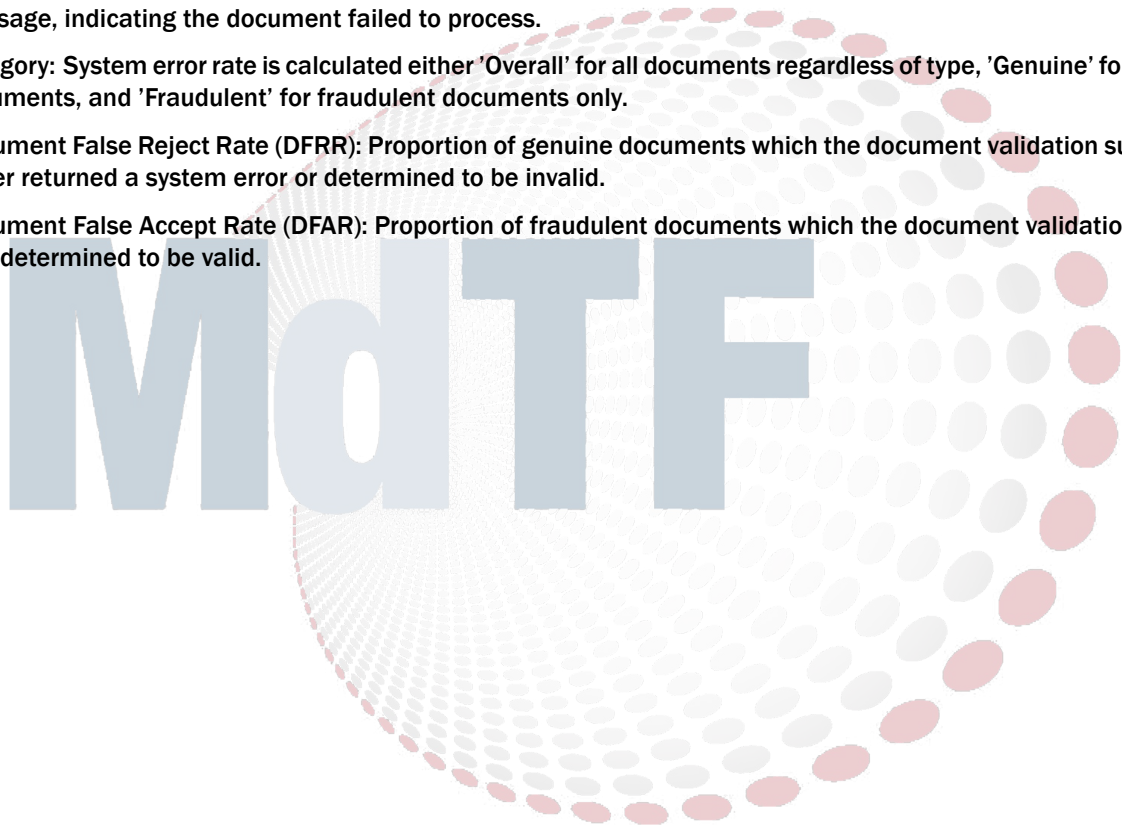
The Identity Document Validation track evaluates identity Document Validation Subsystems (DVSs) on their ability to classify genuine U.S. state-issued IDs as valid and fraudulent IDs as invalid. Document images were captured in controlled environments on modern smartphones, with reasonable effort to control image quality. DVSs attempted to process both the front and back images of the documents and validate their authenticity. For further information about the 2025 RIVR results and test design, please visit <https://mdtf.org>.

Select results are available below. To comply with information sharing agreements between DHS and the DVS providers, all company names are aliased. If you are interested in contacting one or more of the companies that participated in the RIVR, please send an e-mail to peoplescreening@hq.dhs.gov and specify the aliased systems of interest.

Data Description

- Identity Document Validation Subsystem (DVS): Aliased identity document validation subsystem.

- **Smartphone:** Device used to capture the document images.
- **State:** Government ID state of issue. California (CA), the District of Columbia (DC), Maryland (MD), or Virginia (VA) for genuine IDs issued by the specified state, or Overall for all genuine IDs collected combined, regardless of state of issue.
- **Total Genuine Documents:** Total number of genuine documents. Each volunteer provided a U.S. State-issued ID card that was validated by a multi-spectral government ID validation tool. One genuine ID captured on the Samsung Galaxy S22 device was considered not of sufficient quality and was removed from analysis.
- **Total Fraudulent Documents:** Total number of fraudulent documents. Fraudulent documents were collected in partnership with the DHS Homeland and Security Investigations (HSI) Laboratory.
- **System Errors:** The number of documents the subsystem was unable to process.
- **False Rejections:** The number of genuine documents for which the subsystem returned an error or deemed invalid.
- **False Accepts:** The number of fraudulent documents for which the subsystem deemed valid.
- **System Error Rate (SER):** Proportion of documents for which the document validation subsystem returned an error message, indicating the document failed to process.
- **Category:** System error rate is calculated either 'Overall' for all documents regardless of type, 'Genuine' for genuine documents, and 'Fraudulent' for fraudulent documents only.
- **Document False Reject Rate (DFRR):** Proportion of genuine documents which the document validation subsystem either returned a system error or determined to be invalid.
- **Document False Accept Rate (DFAR):** Proportion of fraudulent documents which the document validation subsystem determined to be valid.



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System Error Rates

System error values are presented by DVS, smartphone, and category.

DVS	Smartphone	Category	System Errors	Total Documents	SER
DVS 1	iPhone 14 Base	Overall	37	3,970	0.0093
DVS 1	iPhone 14 Base	Genuine	12	2,032	0.0059
DVS 1	iPhone 14 Base	Fraudulent	25	1,938	0.0129
DVS 1	Google Pixel 7	Overall	23	3,970	0.0058
DVS 1	Google Pixel 7	Genuine	9	2,032	0.0044
DVS 1	Google Pixel 7	Fraudulent	14	1,938	0.0072
DVS 1	Samsung Galaxy S22	Overall	70	3,969	0.0176
DVS 1	Samsung Galaxy S22	Genuine	21	2,031	0.0103
DVS 1	Samsung Galaxy S22	Fraudulent	49	1,938	0.0253
DVS 2	iPhone 14 Base	Overall	13	3,970	0.0033
DVS 2	iPhone 14 Base	Genuine	0	2,032	0.0000
DVS 2	iPhone 14 Base	Fraudulent	13	1,938	0.0067
DVS 2	Google Pixel 7	Overall	8	3,970	0.0020
DVS 2	Google Pixel 7	Genuine	0	2,032	0.0000
DVS 2	Google Pixel 7	Fraudulent	8	1,938	0.0041
DVS 2	Samsung Galaxy S22	Overall	19	3,969	0.0048
DVS 2	Samsung Galaxy S22	Genuine	0	2,031	0.0000
DVS 2	Samsung Galaxy S22	Fraudulent	19	1,938	0.0098
DVS 3	iPhone 14 Base	Overall	196	3,970	0.0494
DVS 3	iPhone 14 Base	Genuine	0	2,032	0.0000
DVS 3	iPhone 14 Base	Fraudulent	196	1,938	0.1011
DVS 3	Google Pixel 7	Overall	194	3,970	0.0489
DVS 3	Google Pixel 7	Genuine	0	2,032	0.0000
DVS 3	Google Pixel 7	Fraudulent	194	1,938	0.1001
DVS 3	Samsung Galaxy S22	Overall	552	3,969	0.1391
DVS 3	Samsung Galaxy S22	Genuine	0	2,031	0.0000
DVS 3	Samsung Galaxy S22	Fraudulent	552	1,938	0.2848
DVS 4	iPhone 14 Base	Overall	42	3,970	0.0106
DVS 4	iPhone 14 Base	Genuine	4	2,032	0.0020
DVS 4	iPhone 14 Base	Fraudulent	38	1,938	0.0196
DVS 4	Google Pixel 7	Overall	40	3,970	0.0101
DVS 4	Google Pixel 7	Genuine	3	2,032	0.0015
DVS 4	Google Pixel 7	Fraudulent	37	1,938	0.0191
DVS 4	Samsung Galaxy S22	Overall	41	3,969	0.0103

DVS	Smartphone	Category	System Errors	Total Documents	SER
DVS 4	Samsung Galaxy S22	Genuine	1	2,031	0.0005
DVS 4	Samsung Galaxy S22	Fraudulent	40	1,938	0.0206
DVS 5	iPhone 14 Base	Overall	0	3,970	0.0000
DVS 5	iPhone 14 Base	Genuine	0	2,032	0.0000
DVS 5	iPhone 14 Base	Fraudulent	0	1,938	0.0000
DVS 5	Google Pixel 7	Overall	1	3,970	0.0003
DVS 5	Google Pixel 7	Genuine	0	2,032	0.0000
DVS 5	Google Pixel 7	Fraudulent	1	1,938	0.0005
DVS 5	Samsung Galaxy S22	Overall	0	3,969	0.0000
DVS 5	Samsung Galaxy S22	Genuine	0	2,031	0.0000
DVS 5	Samsung Galaxy S22	Fraudulent	0	1,938	0.0000
DVS 6	iPhone 14 Base	Overall	0	3,970	0.0000
DVS 6	iPhone 14 Base	Genuine	0	2,032	0.0000
DVS 6	iPhone 14 Base	Fraudulent	0	1,938	0.0000
DVS 6	Google Pixel 7	Overall	0	3,970	0.0000
DVS 6	Google Pixel 7	Genuine	0	2,032	0.0000
DVS 6	Google Pixel 7	Fraudulent	0	1,938	0.0000
DVS 6	Samsung Galaxy S22	Overall	0	3,969	0.0000
DVS 6	Samsung Galaxy S22	Genuine	0	2,031	0.0000
DVS 6	Samsung Galaxy S22	Fraudulent	0	1,938	0.0000
DVS 7	iPhone 14 Base	Overall	0	3,970	0.0000
DVS 7	iPhone 14 Base	Genuine	0	2,032	0.0000
DVS 7	iPhone 14 Base	Fraudulent	0	1,938	0.0000
DVS 7	Google Pixel 7	Overall	0	3,970	0.0000
DVS 7	Google Pixel 7	Genuine	0	2,032	0.0000
DVS 7	Google Pixel 7	Fraudulent	0	1,938	0.0000
DVS 7	Samsung Galaxy S22	Overall	0	3,969	0.0000
DVS 7	Samsung Galaxy S22	Genuine	0	2,031	0.0000
DVS 7	Samsung Galaxy S22	Fraudulent	0	1,938	0.0000

Document False Reject Rates

Document False Reject Rate (DFRR) values are presented by DVS, smartphone, and state.

DVS	Smartphone	State	Total Genuine Documents	False Rejections	DFRR
DVS 1	iPhone 14 Base	Overall	2,032	353	0.1737
DVS 1	iPhone 14 Base	CA	1,298	175	0.1348
DVS 1	iPhone 14 Base	DC	55	54	0.9818
DVS 1	iPhone 14 Base	MD	526	99	0.1882
DVS 1	iPhone 14 Base	VA	97	12	0.1237
DVS 1	Google Pixel 7	Overall	2,032	224	0.1102
DVS 1	Google Pixel 7	CA	1,298	41	0.0316
DVS 1	Google Pixel 7	DC	55	54	0.9818
DVS 1	Google Pixel 7	MD	526	110	0.2091
DVS 1	Google Pixel 7	VA	97	9	0.0928
DVS 1	Samsung Galaxy S22	Overall	2,031	231	0.1137
DVS 1	Samsung Galaxy S22	CA	1,297	44	0.0339
DVS 1	Samsung Galaxy S22	DC	55	54	0.9818
DVS 1	Samsung Galaxy S22	MD	526	111	0.2110
DVS 1	Samsung Galaxy S22	VA	97	12	0.1237
DVS 2	iPhone 14 Base	Overall	2,032	104	0.0512
DVS 2	iPhone 14 Base	CA	1,298	17	0.0131
DVS 2	iPhone 14 Base	DC	55	5	0.0909
DVS 2	iPhone 14 Base	MD	526	70	0.1331
DVS 2	iPhone 14 Base	VA	97	5	0.0515
DVS 2	Google Pixel 7	Overall	2,032	128	0.0630
DVS 2	Google Pixel 7	CA	1,298	9	0.0069
DVS 2	Google Pixel 7	DC	55	3	0.0545
DVS 2	Google Pixel 7	MD	526	102	0.1939
DVS 2	Google Pixel 7	VA	97	6	0.0619
DVS 2	Samsung Galaxy S22	Overall	2,031	103	0.0507
DVS 2	Samsung Galaxy S22	CA	1,297	21	0.0162
DVS 2	Samsung Galaxy S22	DC	55	8	0.1455
DVS 2	Samsung Galaxy S22	MD	526	57	0.1084
DVS 2	Samsung Galaxy S22	VA	97	7	0.0722
DVS 3	iPhone 14 Base	Overall	2,032	394	0.1939
DVS 3	iPhone 14 Base	CA	1,298	19	0.0146
DVS 3	iPhone 14 Base	DC	55	37	0.6727
DVS 3	iPhone 14 Base	MD	526	256	0.4867

DVS	Smartphone	State	Total Genuine Documents	False Rejections	DFRR
DVS 3	iPhone 14 Base	VA	97	66	0.6804
DVS 3	Google Pixel 7	Overall	2,032	393	0.1934
DVS 3	Google Pixel 7	CA	1,298	38	0.0293
DVS 3	Google Pixel 7	DC	55	34	0.6182
DVS 3	Google Pixel 7	MD	526	246	0.4677
DVS 3	Google Pixel 7	VA	97	62	0.6392
DVS 3	Samsung Galaxy S22	Overall	2,031	353	0.1738
DVS 3	Samsung Galaxy S22	CA	1,297	36	0.0278
DVS 3	Samsung Galaxy S22	DC	55	27	0.4909
DVS 3	Samsung Galaxy S22	MD	526	219	0.4163
DVS 3	Samsung Galaxy S22	VA	97	58	0.5979
DVS 4	iPhone 14 Base	Overall	2,032	1,977	0.9729
DVS 4	iPhone 14 Base	CA	1,298	1,298	1.0000
DVS 4	iPhone 14 Base	DC	55	53	0.9636
DVS 4	iPhone 14 Base	MD	526	485	0.9221
DVS 4	iPhone 14 Base	VA	97	88	0.9072
DVS 4	Google Pixel 7	Overall	2,032	1,286	0.6329
DVS 4	Google Pixel 7	CA	1,298	744	0.5732
DVS 4	Google Pixel 7	DC	55	49	0.8909
DVS 4	Google Pixel 7	MD	526	377	0.7167
DVS 4	Google Pixel 7	VA	97	69	0.7113
DVS 4	Samsung Galaxy S22	Overall	2,031	1,554	0.7651
DVS 4	Samsung Galaxy S22	CA	1,297	894	0.6893
DVS 4	Samsung Galaxy S22	DC	55	55	1.0000
DVS 4	Samsung Galaxy S22	MD	526	456	0.8669
DVS 4	Samsung Galaxy S22	VA	97	97	1.0000
DVS 5	iPhone 14 Base	Overall	2,032	12	0.0059
DVS 5	iPhone 14 Base	CA	1,298	0	0.0000
DVS 5	iPhone 14 Base	DC	55	1	0.0182
DVS 5	iPhone 14 Base	MD	526	10	0.0190
DVS 5	iPhone 14 Base	VA	97	1	0.0103
DVS 5	Google Pixel 7	Overall	2,032	12	0.0059
DVS 5	Google Pixel 7	CA	1,298	0	0.0000
DVS 5	Google Pixel 7	DC	55	1	0.0182
DVS 5	Google Pixel 7	MD	526	11	0.0209
DVS 5	Google Pixel 7	VA	97	0	0.0000

DVS	Smartphone	State	Total Genuine Documents	False Rejections	DFRR
DVS 5	Samsung Galaxy S22	Overall	2,031	4	0.0020
DVS 5	Samsung Galaxy S22	CA	1,297	0	0.0000
DVS 5	Samsung Galaxy S22	DC	55	2	0.0364
DVS 5	Samsung Galaxy S22	MD	526	2	0.0038
DVS 5	Samsung Galaxy S22	VA	97	0	0.0000
DVS 6	iPhone 14 Base	Overall	2,032	60	0.0295
DVS 6	iPhone 14 Base	CA	1,298	33	0.0254
DVS 6	iPhone 14 Base	DC	55	2	0.0364
DVS 6	iPhone 14 Base	MD	526	21	0.0399
DVS 6	iPhone 14 Base	VA	97	1	0.0103
DVS 6	Google Pixel 7	Overall	2,032	36	0.0177
DVS 6	Google Pixel 7	CA	1,298	17	0.0131
DVS 6	Google Pixel 7	DC	55	0	0.0000
DVS 6	Google Pixel 7	MD	526	17	0.0323
DVS 6	Google Pixel 7	VA	97	1	0.0103
DVS 6	Samsung Galaxy S22	Overall	2,031	64	0.0315
DVS 6	Samsung Galaxy S22	CA	1,297	24	0.0185
DVS 6	Samsung Galaxy S22	DC	55	3	0.0545
DVS 6	Samsung Galaxy S22	MD	526	25	0.0475
DVS 6	Samsung Galaxy S22	VA	97	8	0.0825
DVS 7	iPhone 14 Base	Overall	2,032	1,234	0.6073
DVS 7	iPhone 14 Base	CA	1,298	1,018	0.7843
DVS 7	iPhone 14 Base	DC	55	0	0.0000
DVS 7	iPhone 14 Base	MD	526	189	0.3593
DVS 7	iPhone 14 Base	VA	97	0	0.0000
DVS 7	Google Pixel 7	Overall	2,032	160	0.0787
DVS 7	Google Pixel 7	CA	1,298	18	0.0139
DVS 7	Google Pixel 7	DC	55	1	0.0182
DVS 7	Google Pixel 7	MD	526	136	0.2586
DVS 7	Google Pixel 7	VA	97	0	0.0000
DVS 7	Samsung Galaxy S22	Overall	2,031	206	0.1014
DVS 7	Samsung Galaxy S22	CA	1,297	76	0.0586
DVS 7	Samsung Galaxy S22	DC	55	0	0.0000
DVS 7	Samsung Galaxy S22	MD	526	124	0.2357
DVS 7	Samsung Galaxy S22	VA	97	0	0.0000

Document False Accept Rates

Document False Accept Rate (DFAR) values are presented by DVS and smartphone.

DVS	Smartphone	Total Fraudulent Documents	False Accepts	DFAR
DVS 1	iPhone 14 Base	1,938	1,410	0.7276
DVS 1	Google Pixel 7	1,938	1,486	0.7668
DVS 1	Samsung Galaxy S22	1,938	1,381	0.7126
DVS 2	iPhone 14 Base	1,938	253	0.1305
DVS 2	Google Pixel 7	1,938	239	0.1233
DVS 2	Samsung Galaxy S22	1,938	255	0.1316
DVS 3	iPhone 14 Base	1,938	110	0.0568
DVS 3	Google Pixel 7	1,938	106	0.0547
DVS 3	Samsung Galaxy S22	1,938	105	0.0542
DVS 4	iPhone 14 Base	1,938	124	0.0640
DVS 4	Google Pixel 7	1,938	199	0.1027
DVS 4	Samsung Galaxy S22	1,938	64	0.0330
DVS 5	iPhone 14 Base	1,938	231	0.1192
DVS 5	Google Pixel 7	1,938	267	0.1378
DVS 5	Samsung Galaxy S22	1,938	253	0.1305
DVS 6	iPhone 14 Base	1,938	12	0.0062
DVS 6	Google Pixel 7	1,938	14	0.0072
DVS 6	Samsung Galaxy S22	1,938	17	0.0088
DVS 7	iPhone 14 Base	1,938	759	0.3916
DVS 7	Google Pixel 7	1,938	1,341	0.6920
DVS 7	Samsung Galaxy S22	1,938	944	0.4871