

From: GISAID Compliance
Date: Sunday, December 14, 2025 at 19:54
To: [...]
Cc: Legal at GISAID
Subject: Web Application: CoV-[...]

Dear Ms. [...],

We write on behalf of Freunde von GISAID e.V. (“GISAID”) to inform you that the Data Connectivity Agreement you entered into with GISAID on May 4, 2021 has been terminated effective immediately.

In order to obtain GISAID’s support and approval for your variants tracking dashboard, you provided multiple assurances both verbally and in writing, explicitly recognizing that all data included in the Data Package falls under the definition of the GISAID Database Access Agreement (“DAA”), and that the utilization of such data is fully governed by the terms and conditions outlined in the DAA.

As part of its responsibilities to data submitters and its role as a custodian of their data, GISAID follows up on alleged violations, in particular on activities that might encroach on the rights of data submitters. An investigation on the utilization of the Data Package you received from GISAID has revealed that you have committed a breach of the terms of your Data Connectivity Agreement, specifically your promise to solely display aggregate data on your dashboard at [...].

Despite having confirmed with your signature that *‘You will ensure that such Data cannot be accessed, downloaded, or used by any other person, including, without limitation, through an application programming interface or download functionality that serves Data obtained from GISAID or data with which Data obtained from GISAID can be reverse-engineered or reconstructed,’* and despite GISAID’s explicit rejection on April 6, 2023 of your request to offer a *‘cov-[...] API,’* your dashboard has been operating as an interface to an underlying database (LAPIS) that provides anonymous access to *all* metadata and unique nucleotide details of over 17 million genomic sequences in a VCF-like format. When mapped to GISAID’s reference genome, these data components allow full reconstruction of genetic sequences (FASTA) and metadata that were shared through and protected by the GISAID mechanism.

In a statement published on your dashboard on November 12, 2025 you elude to violating your Agreement with GISAID, while making a claim that *“At no moment has it been possible to download bulk sequencing data.”* However, this claim is misleading. GISAID’s investigation leaves no doubt that with the accession key you made publicly available, *anyone* could systematically and automatically retrieve from your dashboard *all* essential unique nucleotide details and all associated metadata that is akin to a bulk download. To illustrate this point, we attach an exhibit with numerous examples from a broad range of countries and time points that demonstrate that it was very much possible to reconstruct an entire data entry in GISAID, made up of a FASTA file and its associated metadata.

GISAID has no choice but to demand that you, your collaborators, staff and contractors, or anyone you have authorized access to contents of your Data Package, remove all data obtained from GISAID from any server, whether it is under your control or theirs, including but not limited to your cloud service provider(s), [...], [...], the [...] in Berlin, the [...] in Berlin. GISAID also demands that you immediately remove any GISAID trademarks from your dashboard, or any reference that implies that you are authorized to use data obtained from GISAID in your web application, e.g. Data obtained from GISAID that is used in this Web Application remain subject to GISAID's Terms and Conditions.

We ask that you confirm with GISAID that you and those you provided access to have deleted all data that was provided to you in the Data Package.

Thank you for your prompt attention to this important matter.

Respectfully,

GISAID Compliance

The GISAID Initiative

Real-Time Communication in Disease Prevention

a Nonprofit Public-Private-Partnership

<https://gisaid.org/>

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Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **Australia** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CSV-WITHOUT-HEADERS&country=Australia&date=2025-09-20&dateSubmitted=2025-10-07&pangoLineage=NB.1.2&sex=Male](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CSV-WITHOUT-HEADERS&country=Australia&date=2025-09-20&dateSubmitted=2025-10-07&pangoLineage=NB.1.2&sex=Male)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Australia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-20&dateTo=2025-09-20&dateSubmittedFrom=2025-10-07&dateSubmittedTo=2025-10-07&pangoLineage=NB.1.2&sex=Male&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Australia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-20&dateTo=2025-09-20&dateSubmittedFrom=2025-10-07&dateSubmittedTo=2025-10-07&pangoLineage=NB.1.2&sex=Male&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) allowed the full reconstruction of the Australia's dataset in GISAID ([EPI_ISL_20203088](#))

Retrieving through cov-[...] the data **Austria** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CSV-WITHOUT-HEADERS&country=Austria&date=2025-05-19&dateSubmitted=2025-06-06&age=50&division=Styria](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CSV-WITHOUT-HEADERS&country=Austria&date=2025-05-19&dateSubmitted=2025-06-06&age=50&division=Styria)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Austria&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-05-19&dateTo=2025-05-19&dateSubmittedFrom=2025-06-06&dateSubmittedTo=2025-06-06&age=50&division=Styria&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Austria&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-05-19&dateTo=2025-05-19&dateSubmittedFrom=2025-06-06&dateSubmittedTo=2025-06-06&age=50&division=Styria&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) allowed the full reconstruction of the Austria's dataset in GISAID ([EPI_ISL_19895926](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **Brazil** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Brazil&date=2025-09-01&dateSubmitted=2025-09-19&division=Goi%C3%AIs&age=17](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Brazil&date=2025-09-01&dateSubmitted=2025-09-19&division=Goi%C3%AIs&age=17)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Brazil&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-01&dateTo=2025-09-01&dateSubmittedFrom=2025-09-19&dateSubmittedTo=2025-09-19&age=17&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Brazil&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-01&dateTo=2025-09-01&dateSubmittedFrom=2025-09-19&dateSubmittedTo=2025-09-19&age=17&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of the Brazil's dataset in GISAID ([EPI_ISL_20178408](#))

Retrieving through cov-[...] the data **Colombia** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Colombia&date=2025-05-23&dateSubmitted=2025-06-06&age=67&division=Valle%20del%20Cauca](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Colombia&date=2025-05-23&dateSubmitted=2025-06-06&age=67&division=Valle%20del%20Cauca)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Colombia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-05-23&dateSubmittedTo=2025-06-06&age=67&division=Valle%20del%20Cauca&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Colombia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-05-23&dateSubmittedTo=2025-06-06&age=67&division=Valle%20del%20Cauca&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of the Colombia's dataset in GISAID ([EPI_ISL_19896554](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data, the **Democratic Republic of the Congo** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Democratic%20Republic%20of%20the%20Congo&date=2025-03-26&dateSubmitted=2025-09-16&age=14&division=Eastern](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Democratic%20Republic%20of%20the%20Congo&date=2025-03-26&dateSubmitted=2025-09-16&age=14&division=Eastern)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Democratic%20Republic%20of%20the%20Congo&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-03-26&dateSubmittedTo=2025-09-16&age=14&division=Eastern&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Democratic%20Republic%20of%20the%20Congo&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-03-26&dateSubmittedTo=2025-09-16&age=14&division=Eastern&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of the DRC's dataset in GISAID ([EPI_ISL_20174760](#))

Retrieving through cov-[...] the data **Ecuador** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Ecuador&date=2025-08-08&dateSubmitted=2025-09-05&pangoLineage=XFC&division=Tungurahua&sex=Male](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Ecuador&date=2025-08-08&dateSubmitted=2025-09-05&pangoLineage=XFC&division=Tungurahua&sex=Male)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Ecuador&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-08-08&dateSubmittedTo=2025-09-05&pangoLineage=XFC&division=Tungurahua&sex=Male&age=41&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Ecuador&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-08-08&dateSubmittedTo=2025-09-05&pangoLineage=XFC&division=Tungurahua&sex=Male&age=41&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Ecuador's dataset in GISAID ([EPI_ISL_20155761](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **Ethiopia** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Ethiopia&date=2023-06-16&dateSubmitted=2024-01-03&pangoLineage=BA.5.2.1](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Ethiopia&date=2023-06-16&dateSubmitted=2024-01-03&pangoLineage=BA.5.2.1)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Ethiopia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2023-01-01&dateTo=2025-10-01&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Ethiopia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2023-01-01&dateTo=2025-10-01&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of the **Ethiopia's** dataset in GISAID ([EPI_ISL_18904539](#))

Retrieving through cov-[...] the data **France** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=France&date=2025-09-20&dateSubmitted=2025-10-06&pangoLineage=XFG.3.4](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=France&date=2025-09-20&dateSubmitted=2025-10-06&pangoLineage=XFG.3.4)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=France&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-20&dateTo=2025-09-20&dateSubmittedFrom=2025-10-06&dateSubmittedTo=2025-10-06&pangoLineage=XFG.3.4&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=France&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-20&dateTo=2025-09-20&dateSubmittedFrom=2025-10-06&dateSubmittedTo=2025-10-06&pangoLineage=XFG.3.4&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of **France's** dataset in GISAID ([EPI_ISL_20197487](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **Indonesia** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C_SV-WITHOUT-HEADERS&age=54&country=Indonesia&date=2025-06-16&dateSubmitted=2025-07-07&division=Jakarta](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C_SV-WITHOUT-HEADERS&age=54&country=Indonesia&date=2025-06-16&dateSubmitted=2025-07-07&division=Jakarta)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Indonesia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-06-16&dateTo=2025-07-07&age=54&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Indonesia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-06-16&dateTo=2025-07-07&age=54&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of **Indonesia's** dataset in GISAID ([EPI_ISL_20064762](#))

Retrieving through cov-[...] the data **Ireland** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C_SV-WITHOUT-HEADERS&country=Ireland&date=2025-09-20&dateSubmitted=2025-09-29&pangoLineage=XFG&age=29&sex=Female](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C_SV-WITHOUT-HEADERS&country=Ireland&date=2025-09-20&dateSubmitted=2025-09-29&pangoLineage=XFG&age=29&sex=Female)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Ireland&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-20&dateTo=2025-09-20&dateSubmittedFrom=2025-09-29&dateSubmittedTo=2025-09-29&pangoLineage=XFG&age=29&sex=Female&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Ireland&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-20&dateTo=2025-09-20&dateSubmittedFrom=2025-09-29&dateSubmittedTo=2025-09-29&pangoLineage=XFG&age=29&sex=Female&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of **Indonesia's** dataset in GISAID ([EPI_ISL_20188573](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **Italy** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Italy&date=2025-09-30&dateSubmitted=2025-10-09&age=28&division=Liguria](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Italy&date=2025-09-30&dateSubmitted=2025-10-09&age=28&division=Liguria)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Italy&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-30&dateSubmittedTo=2025-10-09&age=28&division=Liguria&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Italy&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-30&dateSubmittedTo=2025-10-09&age=28&division=Liguria&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of **Italy's** dataset in GISAID ([EPI_ISL_20204119](#))

Retrieving through cov-[...] the data **Japan** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Japan&date=2025-09-07&dateSubmitted=2025-09-17&pangoLineage=PQ.5&division=Saitama](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Japan&date=2025-09-07&dateSubmitted=2025-09-17&pangoLineage=PQ.5&division=Saitama)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Japan&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-07&dateSubmittedTo=2025-09-17&pangoLineage=PQ.5&division=Saitama&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Japan&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-07&dateSubmittedTo=2025-09-17&pangoLineage=PQ.5&division=Saitama&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of **Italy's** dataset in GISAID ([EPI_ISL_20175719](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **Malaysia** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C_SV-WITHOUT-HEADERS&country=Malaysia&date=2025-09-11&dateSubmitted=2025-09-28&division=Kelantan&age=33](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C_SV-WITHOUT-HEADERS&country=Malaysia&date=2025-09-11&dateSubmitted=2025-09-28&division=Kelantan&age=33)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Malaysia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-11&dateTo=2025-09-11&dateSubmittedFrom=2025-09-28&dateSubmittedTo=2025-09-28&age=33&division=Kelantan&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Malaysia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-09-11&dateTo=2025-09-11&dateSubmittedFrom=2025-09-28&dateSubmittedTo=2025-09-28&age=33&division=Kelantan&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Malaysia's dataset in GISAID ([EPI_ISL_20188003](#))

Retrieving through cov-[...] the data **Mexico** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C_SV-WITHOUT-HEADERS&country=Mexico&date=2025-07-01&dateSubmitted=2025-09-19&age=55&division=Morelos](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C_SV-WITHOUT-HEADERS&country=Mexico&date=2025-07-01&dateSubmitted=2025-09-19&age=55&division=Morelos)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Mexico&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-07-01&dateTo=2025-07-01&dateSubmittedFrom=2025-09-19&dateSubmittedTo=2025-09-19&age=55&division=Morelos&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Mexico&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-07-01&dateTo=2025-07-01&dateSubmittedFrom=2025-09-19&dateSubmittedTo=2025-09-19&age=55&division=Morelos&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Mexico's dataset in GISAID ([EPI_ISL_20178888](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data, **The Netherlands** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Netherlands&date=2025-09-21&dateSubmitted=2025-09-29&age=47&pangoLineage=NB.1.8.1](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Netherlands&date=2025-09-21&dateSubmitted=2025-09-29&age=47&pangoLineage=NB.1.8.1)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Netherlands&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-21&dateSubmittedTo=2025-09-29&age=47&pangoLineage=NB.1.8.1&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Netherlands&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-21&dateSubmittedTo=2025-09-29&age=47&pangoLineage=NB.1.8.1&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of The Netherlands' dataset in GISAID ([EPI_ISL_20188636](#))

Retrieving through cov-[...] the data **Norway** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Norway&date=2025-09-05&dateSubmitted=2025-10-08&pangoLineage=JN.1.18.5&division=Oslo](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Norway&date=2025-09-05&dateSubmitted=2025-10-08&pangoLineage=JN.1.18.5&division=Oslo)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Norway&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-05&dateSubmittedTo=2025-10-08&pangoLineage=JN.1.18.5&division=Oslo&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Norway&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-05&dateSubmittedTo=2025-10-08&pangoLineage=JN.1.18.5&division=Oslo&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

- c) it allowed the full reconstruction of Norway's dataset in GISAID ([EPI_ISL_20203279](#))

Retrieving through cov-[...] the data, the **Philippines** shared via GISAID

- a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Philippines&date=2025-06-18&dateSubmitted=2025-08-27&age=83&sex=Male](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Philippines&date=2025-06-18&dateSubmitted=2025-08-27&age=83&sex=Male)

- b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Philippines&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-06-18&dateSubmittedTo=2025-08-27&age=83&sex=Male&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Philippines&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-06-18&dateSubmittedTo=2025-08-27&age=83&sex=Male&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

- c) it allowed the full reconstruction of Philippine's dataset in GISAID ([EPI_ISL_20142023](#))

Retrieving through cov-[...] the data **Portugal** shared via GISAID

- a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS V-WITHOUT-HEADERS&country=Portugal&date=2025-08-02&dateSubmitted=2025-08-29&pangoLineage=BA.2](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS V-WITHOUT-HEADERS&country=Portugal&date=2025-08-02&dateSubmitted=2025-08-29&pangoLineage=BA.2)

- b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Portugal&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-08-02&dateTo=2025-08-29&dateSubmittedFrom=2025-08-02&dateSubmittedTo=2025-08-29&pangoLineage=BA.2&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Portugal&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-08-02&dateTo=2025-08-29&dateSubmittedFrom=2025-08-02&dateSubmittedTo=2025-08-29&pangoLineage=BA.2&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

- c) it allowed the full reconstruction of Portugal's dataset in GISAID ([EPI_ISL_20147213](#))

Examples that illustrate the mechanism by which the[...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data, the **Republic of the Congo** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Republic%20of%20the%20Congo&date=2023-03-01&dateSubmitted=2023-04-14&pangoLineage=XBB&age=21](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Republic%20of%20the%20Congo&date=2023-03-01&dateSubmitted=2023-04-14&pangoLineage=XBB&age=21)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Republic%20of%20the%20Congo&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2023-03-01&dateSubmittedTo=2023-04-14&pangoLineage=XBB&age=21&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Republic%20of%20the%20Congo&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2023-03-01&dateSubmittedTo=2023-04-14&pangoLineage=XBB&age=21&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Republic of the Congo's dataset in GISAID ([EPI_ISL_17470092](#))

Retrieving through cov-[...] the data **Russia** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Russia&date=2025-09-30&dateSubmitted=2025-10-06&age=80&division=Nizhny%20Novgorod](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=CS_V-WITHOUT-HEADERS&country=Russia&date=2025-09-30&dateSubmitted=2025-10-06&age=80&division=Nizhny%20Novgorod)

b) and by downloading the associated metadata,

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Russia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-09-30&dateSubmittedTo=2025-09-30&dateSubmittedFrom=2025-10-06&dateSubmittedTo=2025-10-06&age=80&division=Nizhny%20Novgorod&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Russia&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-09-30&dateSubmittedTo=2025-09-30&dateSubmittedFrom=2025-10-06&dateSubmittedTo=2025-10-06&age=80&division=Nizhny%20Novgorod&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Russia's dataset in GISAID ([EPI_ISL_20199276](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **Senegal** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\].org/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06qUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Senegal&date=2025-07-07&dateSubmitted=2025-08-18&pangoLineage=QC.1&age=5](https://lapis.[...].org/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06qUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Senegal&date=2025-07-07&dateSubmitted=2025-08-18&pangoLineage=QC.1&age=5)

b) and by downloading the associated metadata

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Senegal&accessKey=9Cb3CqmrFnVjO3XCxQL06qUnKPd&dateFrom=2025-07-07&dateTo=2025-07-07&dateSubmittedFrom=2025-08-18&dateSubmittedTo=2025-08-18&pangoLineage=QC.1&age=5&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Senegal&accessKey=9Cb3CqmrFnVjO3XCxQL06qUnKPd&dateFrom=2025-07-07&dateTo=2025-07-07&dateSubmittedFrom=2025-08-18&dateSubmittedTo=2025-08-18&pangoLineage=QC.1&age=5&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Senegal's dataset in GISAID ([EPI_ISL_20131316](#))

Retrieving through cov-[...] the data **Singapore** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06qUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Singapore&date=2025-09-30&dateSubmitted=2025-10-06&pangoLineage=PQ.2&host=Human](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06qUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Singapore&date=2025-09-30&dateSubmitted=2025-10-06&pangoLineage=PQ.2&host=Human)

b) and by downloading the associated metadata

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Singapore&accessKey=9Cb3CqmrFnVjO3XCxQL06qUnKPd&dateFrom=2025-09-30&dateTo=2025-09-30&dateSubmittedFrom=2025-10-06&dateSubmittedTo=2025-10-06&pangoLineage=PQ.2&host=Human&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Singapore&accessKey=9Cb3CqmrFnVjO3XCxQL06qUnKPd&dateFrom=2025-09-30&dateTo=2025-09-30&dateSubmittedFrom=2025-10-06&dateSubmittedTo=2025-10-06&pangoLineage=PQ.2&host=Human&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Singapore's dataset in GISAID ([EPI_ISL_20197177](#))

Examples that illustrate the mechanism by which the [...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **South Africa** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=South%20Africa&date=2025-08-01&dateSubmitted=2025-08-21&age=55&sex=Female&division=Western%20Cape%20Province](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=South%20Africa&date=2025-08-01&dateSubmitted=2025-08-21&age=55&sex=Female&division=Western%20Cape%20Province)

b) and by downloading the associated metadata

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=South%20Africa&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateFrom=2025-08-01&dateTo=2025-08-01&dateSubmittedFrom=2025-08-21&dateSubmittedTo=2025-08-21&age=55&sex=Female&division=Western%20Cape%20Province&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=South%20Africa&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateFrom=2025-08-01&dateTo=2025-08-01&dateSubmittedFrom=2025-08-21&dateSubmittedTo=2025-08-21&age=55&sex=Female&division=Western%20Cape%20Province&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of South Africa's dataset in GISAID ([EPI_ISL_20135300](#))

Retrieving through cov-[...] the data **Spain** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Spain&date=2025-09-30&dateSubmitted=2025-10-06&division=Basque%20Country&age=72&sex=Female](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Spain&date=2025-09-30&dateSubmitted=2025-10-06&division=Basque%20Country&age=72&sex=Female)

b) and by downloading the associated metadata

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Spain&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-30&dateSubmittedTo=2025-10-06&division=Basque%20Country&age=72&sex=Female&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Spain&accessKey=9Cb3CqmrFnVjO3XCxQLO6gUnKPd&dateSubmittedFrom=2025-09-30&dateSubmittedTo=2025-10-06&division=Basque%20Country&age=72&sex=Female&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Spain's dataset in GISAID ([EPI_ISL_20197301](#))

Examples that illustrate the mechanism by which the[...] dashboard allowed anonymous access to *all* metadata and unique nucleotide details of over 17 million genome sequences in a VCF-like format that permitted the reconstruction of FASTA files and associated metadata of entries, thereby bypassing the protections afforded to contributors that share their data via GISAID.

Retrieving through cov-[...] the data **Thailand** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Thailand&date=2025-08-21&dateSubmitted=2025-09-26&division=Ranong&age=30](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Thailand&date=2025-08-21&dateSubmitted=2025-09-26&division=Ranong&age=30)

b) and by downloading the associated metadata

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Thailand&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-08-21&dateTo=2025-09-26&age=30&division=Ranong&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Thailand&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateFrom=2025-08-21&dateTo=2025-09-26&age=30&division=Ranong&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Thailand's dataset in GISAID ([EPI_ISL_20187315](#))

Retrieving through cov-[...] the data **Turkey** shared via GISAID

a) by downloading Unique Nucleotide Details in VCF-like format from cov-[...]

[https://lapis.\[...\]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Turkey&date=2025-06-09&dateSubmitted=2025-10-06&age=39&division=Adana](https://lapis.[...]/gisaid/v2/sample/nucleotideMutations?accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dataFormat=C SV-WITHOUT-HEADERS&country=Turkey&date=2025-06-09&dateSubmitted=2025-10-06&age=39&division=Adana)

b) and by downloading the associated metadata

[https://lapis.\[...\]/gisaid/v2/sample/aggregated?country=Turkey&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-06-09&dateSubmittedTo=2025-10-06&age=39&division=Adana&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex](https://lapis.[...]/gisaid/v2/sample/aggregated?country=Turkey&accessKey=9Cb3CqmrFnVjO3XCxQL06gUnKPd&dateSubmittedFrom=2025-06-09&dateSubmittedTo=2025-10-06&age=39&division=Adana&fields=ace2Binding,age,authors,country,countryExposure,date,dateDay,dateMonth,dateOriginalValue,dateSubmitted,dateSubmittedDay,dateSubmittedMonth,dateSubmittedOriginalValue,dateSubmittedYear,dateUpdated,dateUpdatedDay,dateUpdatedMonth,dateUpdatedOriginalValue,dateUpdatedYear,dateYear,died,division,divisionExposure,fullyVaccinated,gisaidClade,hospitalized,host,immuneEscape,location,nextcladeCoverage,nextcladeDatasetVersion,nextcladePangoLineage,nextcladeQcFrameShiftsScore,nextcladeQcMissingDataScore,nextcladeQcMixedSitesScore,nextcladeQcOverallScore,nextcladeQcPrivateMutationsScore,nextcladeQcSnpClustersScore,nextcladeQcStopCodonsScore,nextstrainClade,originatingLab,pangoLineage,region,regionExposure,samplingStrategy,submittingLab,whoClade,sex)

c) it allowed the full reconstruction of Turkey's dataset in GISAID ([EPI_ISL_20198945](#))