Algorithmic Transparency Standard

Guidance for Public Sector Bodies

Contents

Overview

What is the public sector Algorithmic Transparency Standard?

The Algorithmic Transparency Standard provides a clear and accessible format and mechanism designed to support public sector bodies providing information about the algorithmic tools they use in decision-making processes that affect members of the public.

The Standard is designed to be an enabler for more effective and joined-up use of algorithmic tools to support public service delivery. The CDEI's research shows that 78% of the public feel that it is important for there to be transparency around how their personal information is being shared across government departments. However, many public sector organisations are unsure how to be transparent when using algorithms to deliver services. Supporting organisations to develop mechanisms to enable transparency will help to realise the potential of these technologies by increasing organisations' confidence to make use of the power of algorithms.

What is an 'algorithmic tool'?

An algorithmic tool is a product, application, or device that supports or solves a specific problem, using complex algorithms.

To help non-experts understand this work, we're using 'algorithmic tool' as a deliberately broad term that covers different applications of artificial intelligence (AI), statistical modelling and complex algorithms. An algorithmic tool might often incorporate a number of different component models integrated as part of a broader digital tool.

When determining if this standard is appropriate, the use case where the algorithmic tool is applied is typically more relevant than the complexity of the tool itself.

How do I know if I should complete an algorithmic transparency report?

You are encouraged to complete an algorithmic transparency report for every algorithmic tool you use which meets our [scoping criteria]. These reports will be uploaded onto our GOV.UK repository where they will be accessible to the general public and interested stakeholders.

Why does this matter?

Algorithmic transparency enables public scrutiny and greater accountability of public sector decision-making processes involving algorithms, helping to fulfil the public's democratic right to information. Increasing public awareness and understanding of the use of algorithms in the public sector is also essential to building greater public confidence and trust both in the government and its use of technology.

Proactively providing information in this way also can also:

- support senior risk owners in departments to understand the algorithmic tools that are being deployed, and take meaningful accountability for their use;
- highlight good practice and innovative use cases of algorithmic technologies;
- help to identify potential problems with a given tool early and mitigate the risk of public sector organisations implementing poorly designed tools;
- reduce administrative burden on public sector bodies by preemptively answering questions which may otherwise be raised through Freedom of Information requests;
- benefit external suppliers of algorithmic tools by providing clarity around the transparency requirements involved in supplying them to public sector organisations.

Using this guidance

Step 1 of this guidance supports you in preparing to complete an algorithmic transparency report. This includes advice about:
- how to determine which tools the Standard applies to;
- when and how you should complete and upload your report; and
- the risks you should consider before doing so.

Step 2 supports you when writing your algorithmic transparency report. It covers:
- how much detail is required in each section;
- how to navigate overlaps with other guidance and impact assessments; and
- examples to illustrate how each section should be completed.

Step 3 describes the process for uploading your completed report, and how and when to update your report.

Step 1: Prepare to complete an algorithmic transparency report

a. What tools does the Algorithmic Transparency Standard apply to?

To assess whether your tool is in scope, we would encourage you to reflect on the questions in the scoping criteria included below.

The Algorithmic Transparency Standard is most relevant for algorithmic tools that either:
- Have a significant influence on a decision-making process with significant public effect, **or**
- Directly interact with the general public.

Significant public effect can be interpreted broadly similarly to the notion of decisions with "legal or similarly significant effect" in UK GDPR, e.g. you might want to consider whether usage of the tool could:
- materially affect individuals, organisations, groups or populations?
- have a legal, economic, or similar impact on individuals, organisations, groups or populations?
- affect procedural or substantive rights?
- impact eligibility for, receipt of, or denial of a programme?

Examples of tools that could fall within the scope of these criteria are:
- A machine learning algorithm providing members of the public with a score to help a government department determine their eligibility for benefits (*impact on decision making and public effect*)
- A chatbot on a local authority's website interacting directly with the public which responds to individual queries and directs members of the public to appropriate content on the website (*Direct interaction with the public*)

Examples of tools that would likely *not* fall within the scope of the criteria include:
- An algorithm being used by a government department to transform image to text (e.g. used in digitisation of handwritten documents) as part of an archiving process *(no significant decision or direct public interaction)*
- An automated scheduling tool which sends out internal diary invites from a mailbox *(doesn't have public effect)*

To emphasise, **the context of use of the algorithmic tool matters** here. The same image to text algorithm above might be relevant if being used instead to digitise paper application forms for a government service (e.g. poor performance of the algorithm on some handwriting styles might well have an influence on success rates for individual applicants).

If you are using an algorithmic tool that does not strictly meet these criteria but you would like to provide the general public with information about it, you can still fill out an algorithmic transparency report.

If you have any questions about this, or about which algorithmic tools you should prioritise, you can reach out to the service team at algorithmic.transparency@cdei.gov.uk.

b. When should you complete your algorithmic transparency report?

Algorithmic transparency reports should be published and made publicly available when the tool in question is being piloted and/or deployed. However, it is highly recommended that you start to discuss and fill out the transparency report during the design and development phases to ensure your team can obtain all the necessary information to complete the report. This will also provide an internal record of tools that have been considered during the design and development phases. For tools that do not reach the piloting or deployment stage, you are not expected to upload an algorithmic transparency report to the GOV.UK repository.

Reports for tools in the idea, design, or development phases will be kept internally but not published. Only reports for tools in the production phase will be published in the repository.

If you are considering completing an algorithmic transparency report, we would encourage you to get in touch with the service team at algorithmic.transparency@cdei.gov.uk. We will be happy to provide advice on the suitability of algorithmic tools for the transparency report, and can answer any questions you have about the process. We would also encourage you to contact us again when you are nearing completion of the transparency report, and we will be happy to provide feedback and advice on the report.

c. How should you complete and submit your algorithmic transparency report?

To complete an algorithmic transparency report, you should assign an algorithmic transparency lead to oversee the completion of the report. The lead will need to collate information from across, and sometimes beyond, the organisation. This could include those involved in the administrative decision-making process the tool might support, and the data science team or suppliers involved in the design and deployment of the tool. The algorithmic transparency report may also require clearance from data ethics, communications, and senior leadership teams.

Who should be the algorithmic transparency lead?

The following set of questions should help you determine who should take on the role of lead and who else should be involved in the process of filling in the template:

- Who is initially responsible for the delivery of the project on an operational level?
- Who has access to most of the required information, or connections to the teams holding the required information?
- Who has the time and resources to complete the template?
- Who has the necessary expertise (technical/legal/other) to fill in the report?

Suggested process for completing the report

We recommend you adopt the following process when completing and submitting a report, which can be adapted to suit your organisational structure:

1. The organisation assigns a lead to complete a report for the tool identified to be in scope of the Standard. You should also identify who will need to clear the report before it is published. If you have any questions about the process, please email algorithmic.transparency@cdei.gov.uk.

2. The lead reaches out to all teams/organisations who will be required to provide input into the template. Those involved agree on a plan and timeline for completion which accounts for any necessary clearance processes. The lead sets clear expectations about what information will be required from different teams/organisations. It is particularly important that these requirements are clearly communicated to any suppliers involved as soon as possible[1].

3. The lead manages the process of collecting and collating the required information. This could be through a workshop-style session with relevant teams/organisations, individual meetings with the teams/organisations, or a shared document where teams/organisations can input relevant information. Some of the required information may be available through alternative means; for example, through supplier reports, impact assessments, or from an organisation's website. The lead should check with relevant teams/organisations that information gathered through other means is up to date and that they are happy for it to be included in the report.

4. The lead should ensure that all information is added to the template and that all sections are complete. Most teams who piloted the Standard suggested that writing the report once they have the relevant information took approximately 3-5 hours.

5. The lead should clear the final report with the relevant individuals and teams.

6. The lead should submit the final report to the service team by sending it to algorithmic.transparency@cdei.gov.uk.

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[1] The policy team is currently considering how to support public bodies to articulate transparency requirements to third party suppliers. We are exploring the possibility of including a requirement for compliance with the Algorithmic Transparency Standard into the upcoming AI and Automation framework that will be published by the Crown Commercial Service. We are also looking into developing standardised contractual clauses that public sector bodies could use when procuring algorithmic technologies to facilitate compliance with the Standard.

d. What information should not be published?

Though transparency about how the public sector is using algorithmic tools is useful and appropriate in most circumstances, there is of course some need for caution to ensure that information is not published that would be counter to the public interest. The following section gives some examples of areas where there may be some need for caution. The exemptions from publication in the Freedom of Information Act 2000 are also a useful guide; if information is exempt from FOIA 2000 (e.g. for national security reasons) then it is unlikely to be appropriate for inclusion here.

However, it should be emphasised that the Standard has been designed to minimise likely security or intellectual property risks that could arise from publications, and therefore situations where no information can be safely published are expected to be unusual.

Where a public sector body decides that publishing a report for a specific tool is not possible, completing a transparency report without making it publicly available is highly recommended. Filling in an algorithmic transparency report is a valuable exercise for teams to properly think through the relevant risks, impacts, and accountabilities related to a tool. Reports that are not publicly available can still form part of an internal repository, offering important internal visibility into algorithmic tools in use. Filling in a report can also help identify exactly which pieces of information are particularly sensitive and which are not.

i. Operational effectiveness and gaming
Some use cases for algorithmic tools include identifying potential risky applications for a service, or highlighting possible fraud. In such circumstances, providing too much information about how an algorithmic tool works, or the specifics of the data sets it draws on, could compromise the operational effectiveness of the tool. For example, a malicious user might modify their behaviour to avoid triggering a fraud warning.

In most cases, such issues can be managed by being careful about the level of detail provided in the algorithmic transparency report, especially around the technical design or data used. Wider information, for example on how the algorithmic tool is used in the overall decision-making process may still be safe to release and relevant.

ii. Cybersecurity risks

Some types of information about the development and operation of your algorithmic tool could increase the vulnerability to a cyber attack.

You should involve the appropriate individuals and teams (both within your organisation, and from any relevant third party suppliers) in discussions about what details to include and how to communicate the information. The scope of these discussions could include the following:

- An assessment of which technical details about the system architecture are appropriate to include in order to satisfy the purpose of the report, and which specific details may pose an unnecessary risk and should be omitted.
- Appropriate steps to mitigate predictable forms of attack that could follow from releasing information about your algorithmic tool and organisation. For example, it may be possible to reduce the risk of a targeted phishing attack, and thereby consequent risks of unauthorised access to your algorithmic tool, by including a team email address, rather than that of a named individual, in the 'contact email' field.

Broadly speaking, obscurity is a weak cyber security defence, and if a tool is deployed in a way where the information defined in the Algorithmic Transparency Standard presents a cyber security risk then it is highly likely that there are vulnerabilities that need addressing regardless of levels of transparency.

iii. Intellectual property

You should consider whether some of the information requested could infringe upon the intellectual property rights of your organisation or your third party supplier. This may be something that is raised by a supplier as a concern around providing the information in this report. We have designed and tested the report to only request information at a general level that should not present risks to intellectual property. However, if you or your supplier are concerned, it may be worth checking relevant legal or commercial agreements and involving appropriate specialists.

e. Public scrutiny and communications

Before completing a report, you should consider the possibility that publishing information on your algorithmic tool may invite attention and scrutiny from the public and media. This is particularly true for more high profile use cases and where the use of an algorithmic tool has not been publicly disclosed before.

You can help to mitigate these risks by ensuring you provide clear information and an appropriate level of detail in your report. You can also ensure that your senior leadership and communications teams approve the report before it is submitted to the algorithmic transparency service team.

Your communications team should also be prepared to respond to media requests. You may want to consider publishing something on your organisation's website (for example, a blog post accompanying the release of your report, explaining what the tool is and what motivated you in publishing the algorithmic transparency report. The service team (algorithmic.transparency@cdei.gov.uk) is happy to provide guidance on this.

Step 2: Complete the algorithmic transparency report

Tier 1

In Tier 1 you should give a basic description of how the algorithmic tool functions and why it was introduced into the decision-making process.

We expect that the primary audience for information included in Tier 1 will be the general public and other interested parties looking for a summarised version of how the tool functions and the role it plays.

How much detail should I include in Tier 1?
Tier 1 asks for a basic description of the algorithmic tool aimed at the general public. For this reason, your answers to each question in Tier 1 should ideally consist of no more than a couple of sentences describing how and why the tool works.

Imagine you are describing the tool to a member of the public with only a basic understanding of what an algorithmic tool is. Looking at the information in Tier 1, a reader should be able to understand in general terms what the tool does, how it works, and how it fits into the wider decision-making process or wider public service.

Why is it important to add a team email address rather than an individual's email address?
Adding a team email address rather than the contact details of an individual is important for business continuity and security purposes. When an individual leaves the organisation but the wider team remains, the email address will still be up to date.

Disclaimer: This is a fictional example constructed to illustrate how the Standard could be applied. It is not based on any existing algorithmic system, nor is it intended to be a fully accurate representation of existing school admissions processes.

Example:
Name: Algorithm for secondary school place allocation

Description: This algorithmic tool helps the council assign secondary school places to individual children.

Where schools are oversubscribed, priority for places is determined by a set of published admissions criteria, with some criteria specific to individual schools. Applying these criteria consistently across all of the applications and schools in Y Council's area is a complex and labour intensive process. The council receives a large number of appeals each year, and occasionally these demonstrate that errors are made.

To make the process more efficient, and reduce the number of errors, the council has developed an algorithmic tool that assigns each child to a school. The algorithm automates the application of existing admissions criteria, including individual student preferences, geographical radius, special needs (e.g. due to special educational needs), etc. It will enable schools to utilise a wider range of admissions criteria in future, for example replacing or supplementing current measures of geographic distance with travel time by walking, cycling and public transport in line with the council's healthy streets strategy.

URL of the website:
www.ycouncil.gov.uk/residents/children-education-and-families/school-admissions

Contact email: school-admissions@ycouncil.co.uk

Tier 2

In Tier 2 you should give more detailed information about the algorithmic tool.

While Tier 2 will also be accessible to the general public, we anticipate that the primary audience for Tier 2 will be informed and interested parties, such as civil society organisations, journalists, and other public sector organisations seeking to better understand the tools being used across the public sector.

As it is targeted at informed and interested parties, this section should include more detail.

Tier 2: Owner and Responsibility (1.1-1.4)

The owner and responsibility section details information about accountability for the development and deployment of the tool. Providing this information is important because it helps people to understand who is accountable for the tool and its use, and how they can find out more information.

How much detail should I include in this section? (1.1-1.4)
This section should clearly convey information about the organisation, team and senior responsible owner (SRO) with responsibility for the tool. We would expect each field to contain around 2-3 bullet points of information, though you are welcome to provide more detail if you think it is helpful to include.

If the tool involved a third party supplier, the information should provide a clear explanation of what the relationship with the supplier was, though we do not anticipate that this would consist of more than a couple of sentences.

I am not sure who the senior responsible owner for the tool is. What should I put in this field? (1.3)

The SRO should be the person who is accountable for the introduction of the tool. This would usually be a different individual to the person who delivers the project at an operational level. It should ideally be someone with accountability for the use of the tool in an operational context, not just for the technical delivery.

Multiple external suppliers have been involved in the delivery of the tool through a multi-layered supply chain. What information should I provide about this in the 'external supplier role' field? (1.4.3)

A procured tool can entail the involvement of multiple companies at different places in the supply chain. For instance, a public body could procure a tool from a company, which in turn procured the model and data from another company before integrating the model into a customisable tool.

Ideally, you should describe those different supplier relationships as clearly and concisely as possible, detailing which organisation was or is responsible for which part of the final tool that you are deploying.

Example:
Organisation: Y council

Team: School Admissions Team (Education division)

Senior responsible owner: Head of Education Division

External supplier involvement: Yes

External supplier: AI Tools UK

External supplier identifier: 083827744

External supplier role: The algorithmic tool was developed by AI Tools UK. Their experts have worked together with education policy experts at Y council to configure the tool and develop rules according to the requirements of the council.

Procurement procedure type: Open

Terms of access to data for external supplier: AI Tools UK have been provided with controlled access to school admissions data from previous years to enable the system to be developed and configured. This has been done in compliance with data protection legislation and all AI Tools UK staff with access to the data have been subject to appropriate vetting checks. Access to the data is only granted for a limited period of time while the tool is developed. Ongoing maintenance and operation of the tool is carried out by council staff.

Tier 2: Description and Rationale (2.1-2.3)

In this section, you should provide more granular detail about the tool, including its scope and an expanded justification.

What should be included in the detailed description field?
This field is optional and is to be a longer form version of the description provided in Tier 1. Information provided in this field may duplicate information provided in other fields below, however, it is an opportunity to provide an overall description of the tool and account of the logic, rules and criteria used by the algorithm(s) and tool. A good rule of thumb here would be that, from reading this description, individuals should be able to understand how the tool relates to operational level decisions.

You are also encouraged to include technical details about how the tool works where appropriate.

The example included below may be helpful to give an idea of the level of detail we would typically expect to see in this section. You can also see how other teams have completed this section [here].

My team has purchased the tool from an external supplier who retains a lot of the information required to answer this section (2.1). How do I obtain this information from the supplier?

If a supplier retains part of this information, we encourage you to seek out your commercial contact on the supplier's side and ask for the relevant information, explaining why you are asking for this information and why algorithmic transparency is important in the public sector. If the supplier is reluctant to share some information with you based on concerns around potentially revealing intellectual property (IP), it can help to walk the supplier through the questions asked in the

Standard, explain how they are designed to provide a high-level picture of the tool and not compromise IP.

Example:

Scope: This algorithmic tool has been designed to apply admissions criteria to automatically assign a school space to each child in the main annual admissions round. The tool provides an initial allocation, but some individual circumstances will continue to be dealt with manually, including in-year admissions outside of the usual cycle.

The purpose of the place allocation algorithm is to ensure the allocation of school places is time- and labour-efficient, and applies the admissions criteria accurately and fairly.

Many of the admissions criteria supported are fact-based criteria (e.g. sibling preference, looked-after children). However, the assessment of travel time to school is based on a complex proprietary machine learning tool drawing on a range of mapping and public transport data.

Benefit:
- Improve efficiency in allocation of school spaces (savings of 4 weeks' work for 5 full-time employees)
- Reduce error rate in allocation
- Enable potential future changes in admissions criteria to enable them to better take into account prospective students' choices and circumstances, resulting in a fairer outcome
- Improve the council's understanding of children's choices and circumstances

Previous process: The current process for applying admissions criteria involves a mixture of manual and automated steps, managed through a complex set of internally developed spreadsheets. The process is highly reliant on the knowledge and experience of a single member of staff and is not sustainable in the long term.

The limitations of this process restrict the ability of the council to improve admissions criteria to better align to the needs of children and schools.

Alternatives considered: Retaining the current approach was considered, but rejected because of the significant risk of failure of the current system in the event of staff changes. A range of technical options, and options for sets of admissions criteria that could be supported, were considered through the development process, in consultation with schools and representatives from parent groups.

Tier 2: Decision making process (4.1-4.5)

In this section you should provide further information about how the tool is integrated into the decision process as well as oversight mechanisms.

How much detail should I include in this section? (4.1-4.5)

This depends on the complexity of the algorithmic tool, but as a general guide we would expect teams to provide around 150 words written for a non–technical audience. This should cover the key elements of how the tool is integrated into decision making processes and oversight mechanisms.

What information should I include in the 'appeals and review' field if this is not applicable to the tool I am developing or deploying? (4.5)

If no appeals or review process is necessary for your tool, include a short sentence explaining why you are not completing this section in the relevant field.

You should also be aware of Article 22 UK GDPR which states that '*The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her*'.

If the algorithmic tool you are completing a transparency report for falls within scope of the provisions of Article 22, for example, because it informs decisions that are 'solely based on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her', then you must complete this section.

For further guidance on this issue, please refer to the ICO's guidance on '[Rights related to automated decision making, including profiling](#)'.

Example:
Process integration: Decisions around the allocation of school places are made on an annual basis by the council, working closely with schools. The algorithm replaces the previous system used for managing these allocations, adding a significantly greater degree of automation to existing processes. It makes a recommendation for the allocation of places. Prior to the allocation being finalised, the admissions team will carry out a manual review of the allocation, consulting with schools where necessary, prior to communication of outcomes to children.

Provided information: The tool provides a recommendation for an allocation of children to available school places. It also provides an explanation to the case officer of how the different factors contributed to a student being allocated to the assigned school. This includes a map-based view of home addresses of successful and unsuccessful applications to enable sense checking of geographic distance and travel time allocations.

Human decisions and review: The automated process is reviewed every year to check its performance. During each period of allocation, the school admissions team sense checks the allocations made by the software, and individual schools are also given an opportunity to review their allocations. After the sense check, the allocation is approved by the responsible director and

the notifications to students are released. Human officers can override the recommendation made by the automated process. These decisions are also fed into the automated process, alongside information on appeals by students and the outcome of appeals.

Required training: Each officer using the tool goes through an onboarding process that trains them on how to use the tool and troubleshoot. Training is also provided for schools interacting directly with the tool.

Appeals and review: Existing appeals processes for school admissions will continue to apply, as set out on the council website. Students and their parents can appeal a decision within two weeks of allocation, stating the reasons for their appeal. Appeals will be handled by human officers, but are only likely to be successful if they identify that the admissions criteria have not been applied correctly.

Tier 2: Technical Specification and Data (5.1-5.14)

In this section you should provide further information on the technical specification of the algorithmic tool as well as the datasets a) used to train the model and b) which the model is or will be deployed on.

How much detail should I include in the 'method' field? (5.1)

As a minimum, you should include the name and a short description of the method(s) or model(s) used in the tool. If it aids understanding of the tool, you are also encouraged to give a summary of the model or method or provide a link to publicly available resources that offer further information.

What kind of metrics am I expected to detail in the 'model performance' field? (5.5)

Performance metrics will differ based on what type of method and tool you are developing or deploying. It is up to you to choose which metrics are most appropriate and useful to your project. Useful metrics to consider are: accuracy metrics (such as precision, recall, F1 scores), metrics related to privacy, and metrics related to computational efficiency.

For more information about setting performance metrics, you may find this GOV.UK Service Manual guidance helpful.

How can I find more information about how to identify and mitigate bias in the data, model and output of the tool? (5.5)

For more information about bias in algorithmic decision-making, see the CDEI's review into bias in algorithmic decision-making, especially Chapters 1 and 2. For more information about how to

mitigate bias in algorithmic decision making, you may find it helpful to review the CDEI's repository of bias mitigation techniques which can be found [here](#).

You ask for information about 'system architecture'. What does this mean and what information should I include in this field? (5.6)

By 'system architecture' we are referring to a description of the overall structure of the tool and its technical components. This field asks you to provide documentation that provides a clear description of the system architecture. For example, you could include a GitHub repository image or link to a diagram used internally. You can see a helpful example of the diagram of system architecture provided by the Department for Health and Social Care in their algorithmic transparency report for the QCovid tool [here](#).

How much detail should I include in the 'source_data_description' field? (5.8)

The amount of information you should include in this section depends on the complexity of the algorithmic tool, but you should aim to give a broad overview of the data used to train, test, configure and operate the algorithmic tool, specifying the different purposes the data served and which parts of the data were used for each different purpose. This should include data used by both the public sector team and the third party supplier where applicable.

In the 'source_data_description' field, should I include information on data used to train the model, or data used to configure the tool for the specific use case? (5.8)

If you have information about both, please include both. However if you only have information about one of the two, that is also acceptable. In this case, please include a brief summary of why you have not included information about (a) training data or (b) data used for configuration of the tool for the specific use case.

In the 'source_data description' field, what do you mean by 'variables'? What information should I include about how variables are used? (5.8)

The term 'variables' refers to a characteristic of interest that is being measured, such as age, address, salary, etc. You should include a description of the types of variables or features used to train, test or run the model - for example, 'age' or 'address'.

In certain cases, such as where there are complex and large datasets, it might not be feasible for a team to disclose all the variables in a dataset. In this case, teams should disclose, at a minimum, variables of interest, such as protected characteristics, potential proxies, or variables with high predictive power or that have a significant bearing on the model.

I am unable to share information about the data used for this algorithmic tool. What should I do? (5.7-5.14)

If you are not able to share information about the data used by this algorithmic tool, please include a brief summary of why it is not possible to provide information about the data.

I'm concerned that sharing information about the variables and potential proxies could lead to individuals being made identifiable. What should I do? (5.7-5.14)

It is unlikely that the transparency report would lead to individuals being made identifiable as you are only being asked to provide a general description of the types of variables being used. If you are considering making the dataset you are using openly accessible and linking to it, you should comply with the relevant data protection legislation to prevent individuals from being made identifiable from the dataset.

This should also be considered as part of a Data Protection Impact Assessment (DPIA). For further guidance on completing DPIAs, please refer to the ICO's guidance.

What other resources are available to support me with completing this section?

You may find it helpful to consult the ICO's AI and data protection risk toolkit, which can be found here.

Example:
Method: The majority of the tool is rules-based, i.e. it automates the application of structured criteria set by the admissions policy. The model that estimates travel time to school is a proprietary commercial model trained on a range of transport and telecommunications data via a deep neural network..

Frequency and scale of usage: Each year, the automated process makes approx. 3000 decisions, equivalent to the number of students to be newly enrolled in school.

Phase: Production

Maintenance: As the tool is only being used in a one-off instance once per year, maintenance and review of the tool occurs yearly prior to the operation of the tool. In the future, the logic and rules employed by the tool as admissions policies may evolve over time, and the travel time model is updated to reflect more recent travel data.

Model performance: Details about the performance of the travel time model are published by the supplier here. More broadly, we are currently collecting performance metrics on the number of decisions overridden by a human and number of successful appeals/challenges to an allocation.

System architecture:
www.ycouncil.gov.ukresidents/children-education-and-families/schoolspaceallocation/systemarchitecture...

Source data name: Student data 2017-2021, geospatial and mobility data, school data 2017-2021

Source data description: The model was trained on a dataset that was retrospectively collected from the body of students that enrolled in the 5 years prior to the development of the school space allocation software. Data on relevant factors (e.g. school preference, address, travel time to school, special needs, etc) was collected from this body of students for the purposes of developing the algorithmic tool.

The model is deployed on input data obtained on an annual basis through application forms submitted.

For the training and input data, the council has collected/will collect student-level data on:
- A ranking of preferences of schools
- Address
- Names of friends that the student would like to attend the same school with
- Special needs related to learning
- Special needs related to extracurricular activities (e.g. specific sports, artistic activities, etc.)

Other data that are used in the tool are data on the schools (number of available places, address, offerings for special needs and activities) as well as geospatial and mobility data to determine travel times by different modes of transport.

Source data URL: N/A - the data contains personal data and cannot be made public.

Data collection: The training data was collected retrospectively from existing schools and the body of students that enrolled in the year prior to the development of the school space allocation software for purposes of developing the tool. Ongoing year-by-year data is being collected from students and schools 3 months prior to the allocation being performed.

Data cleaning: After the data has been collected by the council, any pre-processing and cleaning is performed by AI Tools UK. This includes, for example, scanning and correcting for duplicate observations and missing data, fixing structural errors, such as spelling mistakes or differing naming conventions.

Data completeness and representativeness: Schools and student data is of good quality, and subject to a wide range of checks. We are conscious of potential limitations in the data underlying the travel time model, which may not fully reflect recent changes to road networks and public transport networks during COVID-19. This issue will be monitored carefully by teams using the tool.

Data sharing agreements: A data sharing agreement for this project has been put in place between Y Council and AI Tools UK.

Data access and storage: AI Tools UK have been provided with access to limited amounts of the council's data to enable the system to be configured. This has been done in compliance with data protection legislation and all AI Tools UK staff with access to the data have been subject to appropriate vetting checks. Access to the data is only granted for a limited period of time while the tool is configured and operated. Otherwise, data access for both the training data and yearly input data is restricted to the Y Council's education department and schools. Data is stored in identifiable format for 4 years after which point it is anonymised.

Tier 2 (Risks, Mitigations and Impact Assessments) (6.1-6.2)

In this section you should provide information on impact assessments conducted, identified risks, and mitigation efforts.

Am I expected to write a summary of the completed impact assessment like the DPIA if I provide a link to the full assessment? (6.1)

If you are providing an openly accessible link to the full assessment, you do not need to provide a summary.

What do you mean by 'risks' and what are the most common risks you would expect to see described in this section? (6.2)

In this field we are asking teams to consider possible risks that they think could arise in relation to the use of the algorithmic tool, and any actions or processes they have in place to mitigate against those risks. There are a range of possible risks that may arise, and the nature of risks will vary widely depending on the context, design and application of individual tools. The categories of risk likely to be relevant to the use of the algorithmic tool are:
- Risks relating to the data
- Risks relating to the application and use of the tool
- Risks relating to the algorithm, model or tool efficacy
- Risks relating to the outputs and decisions
- Organisational and corporate risks
- Risks relating to public engagement

Please note this list is not exhaustive and there may be additional categories of risks that are helpful to include.

What other resources are available to support me with completing this section?

For further guidance on conducting risk assessments for public sector projects, you may find it helpful to look at HM Treasury and the Government Finance Function's *Orange Book*, which is updated regularly.

You may find it helpful to consult the ICO's AI and data protection risk toolkit, which can be found [here](#).

Example:

Impact assessment

Assessment title: Data Protection Impact Assessment
Short overview of impact assessment conducted:
See summary and full assessment under the link provided
Date completed: 10th December 2021
Link: www.ycouncil.gov.uk/children-education-and-families/schoolspaceallocation/dpia/

Assessment title: Equality Impact Assessment
Short overview of impact assessment conducted:
See summary and full assessment under the link provided
Date completed: 15th December 2021
Link: children-education-and-families/schoolspaceallocation/eia

Risks

Risks:	Mitigations:
The tool's computation of travel time might not always accurately reflect real world travel times for individual children.	The council has set out a clear definition of how travel time is calculated on our website, so that applicants can understand clearly how this will apply to them. Individuals can access estimated travel times to schools via the tool prior to submitting their application, and hence have an opportunity to raise any queries prior to school places being allocated.
The data and tool could be accessed by unauthorised users	The tool has robust access controls and only a small number of users have the ability to access this directly. Data access for both the training data and yearly input data is restricted to the Y Council's education department and school board. AI Tools UK have been provided with access to limited

	amounts of the council's data to enable the system to be configured. This has been done in compliance with data protection legislation and all AI Tools UK and council staff with access to the data have been subject to appropriate vetting checks.
Misuse of personal information	All data is being handled in compliance with data protection legislation. A [Data Protection Impact Assessment](#) has been conducted and signed off by the council.

Step 3: Upload and update your algorithmic transparency report

As noted in Step 1, if you have completed a report for a tool that is currently in the idea, design or development phase, these reports should be kept internally in your organisation but will not be published in the repository.

Only transparency reports for tools that are in the production phase will be published on the repository.

Once you have completed an algorithmic transparency report and obtained the necessary approvals for it to be published, you should follow the following process to upload your report:

1. Send your completed report to the service team at algorithmic.transparency@cdei.gov.uk.
2. The report will be reviewed and quality assured by a member of the service team, who will discuss any questions or suggested amendments with the team submitting the report. This is to ensure accessible language that can be understood by a general audience has been used throughout, all applicable fields have been completed, and quality thresholds have been met.
   a. Addressing any queries and responding to suggested amendments may involve discussion via email or calls between the service team and the team submitting their report until outstanding issues have been addressed and all necessary amendments have been made.
3. The service team will upload and publish the final version of the report onto the GOV.UK repository alongside other algorithmic transparency reports.
4. Submitting teams are encouraged to take this opportunity to publish the report on their own websites if possible. This will increase transparency by making the information available to those using the organisation's website as well as those looking at the GOV.UK repository.

Updating the report

Maintaining transparency reports
The content of an algorithmic transparency report may become outdated or not reflect the latest version of a given tool if the tool is updated or refined.
1. Teams will be sent a reminder from the service team by email every six months reminding them to review their algorithmic transparency report(s). They will be given the option of updating their report(s) before resubmitting them to the register or confirming that no changes are required.
2. Teams are also free to request updates be made to their published reports at any time by contacting the service team.

Version Management

The most recent version of the report will be available on the GOV.UK repository. Previous dated versions will be available in the archive on GOV.UK.

If teams have uploaded an algorithmic transparency report to the repository and the tool in question is no longer in use, teams can contact the maintenance team to update the report accordingly. Such tools will still be available in the archive on GOV.UK.

Where amendments are made to the Standard, teams will not be asked to complete updated versions of the Standard for tools they have already reported on, unless they are required to update the existing report for other reasons - for example, if the tool has changed. The version of the Standard which has been completed will be noted on the completed report.

Annex 1: Glossary of Key Terms

Algorithm: An algorithm is a set of step-by-step instructions. In artificial intelligence, the algorithm tells the machine how to find answers to a question or solutions to a problem.

Algorithmic tool: An algorithmic tool is a product, application, or device that supports or solves a specific problem, using complex algorithms. You can develop a tool in-house or buy from a third party. To help non-experts understand this work, we're using 'algorithmic tool' as a deliberately broad term that covers different applications of AI and complex algorithms.

Bias: In statistics, bias has a precise meaning, referring to a systematic skew in results, that is an output that is not correct on average with respect to the overall population being sampled. In general usage, bias is used to refer to an output that is not only skewed, but skewed in a way that is unfair. Bias can enter algorithmic decision-making systems in a number of ways. For more information, see the CDEI's Review into Bias in algorithmic decision-making.

Model: A model is the output of an algorithm once it's been trained on a data set. It combines the rules, numbers, and any other algorithm-specific data structures needed to make predictions. A model represents what was learned by a machine learning algorithm.

System architecture: A description of the overall structure of the algorithmic tool and its technical components.