TUC
Changing the world of work for good

PEOPLE-POWERED TECHNOLOGY

COLLECTIVE AGREEMENTS AND DIGITAL MANAGEMENT SYSTEMS

Disclaimer

Nothing in this publication should be relied upon as legal advice. If you require legal advice, please approach your trade union or a qualified adviser.

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INTRODUCTION

Unions are uniquely placed to make a significant contribution towards ensuring that technology at work is for the benefit of all.

Through consultation and collective bargaining unions can make sure workers have a say in the development, procurement and application of technology at work.

This provides a system of co-governance, enabling workers to influence and oversee the use of technology alongside their employer and others.

In this way, workers and unions can help to re-shape digitalisation at work, supporting compassionate innovation that leads to a better world of work for all, with workers sharing in the rewards of greater productivity.

Our goal is people powered technology at work – technology with human interests at heart.

This guidance explores how collective agreements can help with co-governance of algorithmic management systems (AMS), also known as digital management systems. These systems automate tasks previously carried out by a human manager.

The guide is designed to signpost union reps and others on how to gain a basic understanding of the technology, how it operates, and why it matters – before starting any negotiating.

FIGURE 1: *Points of union influence*

Collective bargaining
Negotiating use and restrictions

Regulation
Campaigning for better regulation

Legal protections
Using rights and redress for harm caused by technology

UNION WORKPLACE INFLUENCE ON AMS

UNION INFLUENCE

UNION EXTERNAL INFLUENCE ON AMS

Consultation
Taking part in statutory consultation rights, data protection and equality impact assessments, algorithmic impact assessments, health and safety risk assessments

Standardisation
Taking part in development of product standards, highlighting worker experience and interests

We then consider how to assess the context of an agreement, and some of the key issues to be addressed.

These include the benefit of establishing general principles and clear red lines, the apparatus for co-governance, the value of human-led decision making, human contact and expertise, the role of data and the need for information rights.

There are other important systems of accountability that work in conjunction with collective agreements (Figure 1) such as legal protections, statutory consultation rights, impact assessments, standardisation, auditing and certification. These are addressed only briefly here, but merit further attention from a worker and union perspective.

USING THIS GUIDANCE

FIGURE 2: *Steps to negotiating*

BEFORE YOU START　　　　**GETTING STARTED**　　　　**NEGOTIATING**

1 Understand the technology

2 Understand the impact on workers

3 Assess the context – conduct investigations

4 Identify the key issues for agreement

This guidance is for union officials and representatives who have read our guidance *When AI is the Boss*[1] and would like to:

› develop their understanding of digital management systems and the implications for workers (Parts 1 and 2)

› get ready to negotiate with an employer about the use of digital management systems (Part 3)

› establish a collective agreement with provisions on digital management systems (Part 4)

› put together union training programmes on the above.

The guidance is split into four parts to take you on a four-step journey towards negotiating a collective agreement (see Figure 2, above).

Action checklists

These checklists summarise the actions we have recommended in this guidance. You will find a lot more information about each action as you read through.

We have put the full checklists here to give you an overview of where we are heading in the guidance, and so you can return to this as a quick reminder of the steps to take.

Action checklist: before you start – understanding and training

✓ Establish a basic understanding of what an algorithmic management system is, how it operates and the role of data

✓ Understand the implications of being managed by technology

✓ Practise communicating about the technologies and explaining how they work to others

✓ Access training on artificial intelligence at work, algorithmic management, automated decision making and data

Action checklist: getting started – assessment of context

- ✓ Who is the employer, and do you have an organisational chart to help you understand the business? Which department and manager are responsible for deployment of the tool/system?
- ✓ Is your union recognised for collective bargaining?
- ✓ Are there any existing relevant collective agreements, contractual entitlements, or workplace policies?
- ✓ How has the employer met legal obligations governing AMS such as those relating to health and safety, data protection, equality and human rights law, and including statutory consultation? How has the employer documented compliance with legal obligations?
- ✓ Aside from legal rights and obligations, what are the other systems of accountability that interact with collective agreements? For example, algorithmic impact assessments and auditing processes.

- ✓ Are digital management systems already being used? Carry out an investigation. Map these systems, their data sources, categories and purposes.
- ✓ Are there any factors that are specific to your sector?
- ✓ What will the employer regard as barriers to a collective agreement? For example, will they be worried about intellectual property rights over the technology, or have concerns about revealing or breaching procurement contract terms?

Action checklist: negotiating an agreement – key issues

- ✓ Think carefully about definitions – what and who will be covered (consider employment status and third parties)?
- ✓ Establish some general principles
- ✓ Draw clear red lines
- ✓ Create the apparatus needed – the institutions and roles
- ✓ Consider other accountability systems
- ✓ Ensure workers share in the rewards from greater use of technology
- ✓ Protect human review, contact and expertise
- ✓ Secure full transparency and explainability
- ✓ Introduce data power and control for workers.

BEFORE YOU START: THE TECHNOLOGY

FIGURE 3: *How AMS works*
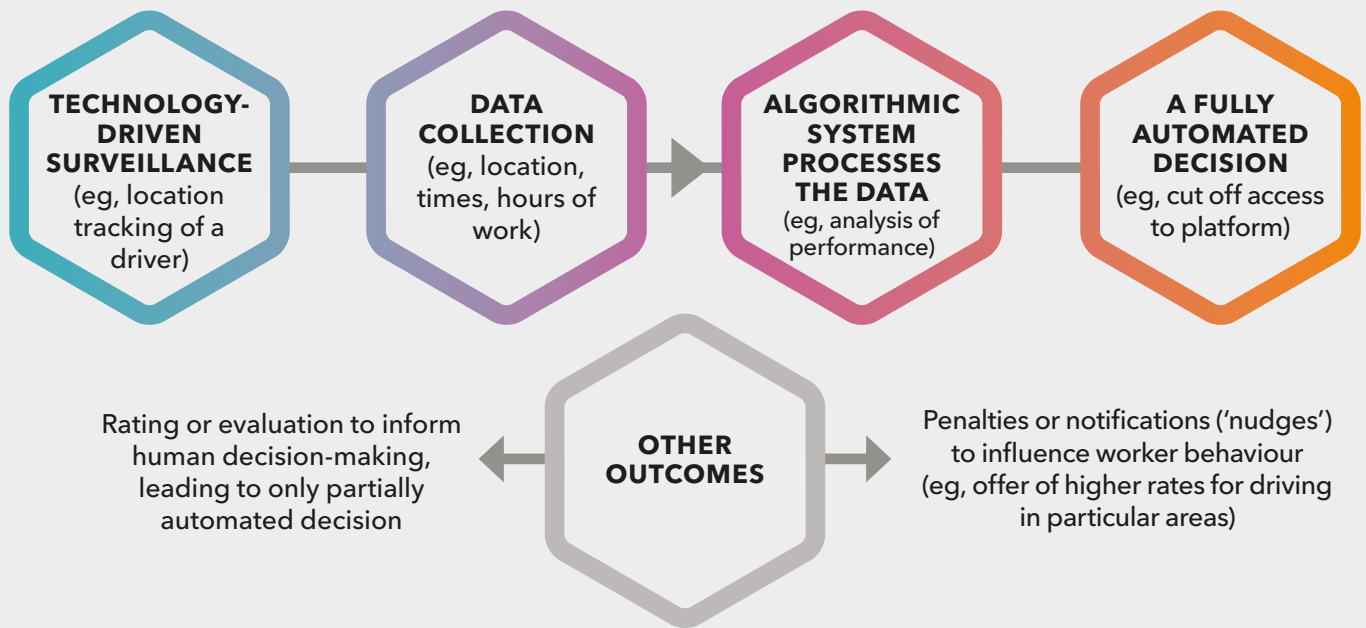
This part of the guidance is to help you develop your understanding of digital management systems before you start getting ready to negotiate a collective agreement.

Action checklist: before you start – understanding and training

✓ *Establish a basic understanding of what an algorithmic management system is, how it operates and the role of data.*

✓ *Practise communicating about the technologies and explaining how they work to others.*

✓ *Access training on artificial intelligence at work, algorithmic management, automated decision making and data.*

What is an algorithmic management system?

An algorithmic management system is a digital system that either partially or entirely automates tasks usually associated with a human manager.

For example:

> a rating system where a worker is given an automatically generated rating using data collected from customers

> an automated hiring system

> algorithmic evaluation of a potential redundancy and termination of employment

> the automated tracking and allocation of tasks, including productivity targets and measures

> monitoring of expression and emotion with facial recognition technology and an evaluation of performance based on this.

Algorithm

An algorithm is a mathematical rule. Algorithms are used in many different contexts, not just in technology. However, algorithms used in technology are usually a set of rules applied by a computer to come to a decision.

Management system

An algorithmic management system contains several components (see Figure 3 above), each of which merits analysis from a worker perspective.[2]

It is also important to consider the wider context of the development, procurement and application (the value chain) of the AMS in the workplace.

Algorithmic management is a system with different components. It is helpful to have a basic understanding of how each part of the system works.

Artificial intelligence

Artificial intelligence (AI) is often used in an AMS, although a more basic computer-operated system may also be in place.

AI means when computers carry out tasks that you would usually expect to be completed by a human.

The way in which AI generally operates is with rules-based algorithms that have been given instructions by a human along the lines of "if this .... then that...". For example, "if the worker falls below 'this' productivity target, then implement 'that' disciplinary measure".[3]

The algorithms produce decisions and other outputs such as penalties or notifications.

Machine learning

Machine learning is a category of AI. As machine learning takes place over time, the technology will not necessarily continue operating in the same way as at the outset.

In machine learning, there are not the clear "if this...then that" type instructions for the algorithm that have come from a human developer.

The machine learning takes place as the algorithm works towards a goal using data and experience accumulated over time. In this way, there is independent learning and evolution of the technology, and it is less clear how the outcome has been reached.

This process is far more complicated that the "if this...then that" approach and means that it becomes increasingly difficult for a human to work out how the algorithm has produced decisions and other outcomes, and to challenge these.

AMS and platform work

Algorithmic management originated in the so-called gig economy and was a term used to describe how Uber and Lyft's software algorithms allowed workers to be "assigned, optimized, and evaluated through algorithms and tracked data."[4]

Since then, algorithmic management has spread well beyond platform work, and become a pervasive workplace practice in different sectors and stages of the employment relationship.[5]

FIGURE 4: *Participatory data stewardship –*
a framework for involving people in the use of data

INFORM
We will keep you informed about
how your data is being governed.

INVOLVE
We will work with you to ensure your
concerns and aspirations are directly
reflected in data governance.

COLLABORATE
We will look to you for advice and
innovation in the design of data governace
models and incorporate this and
recommendations where possible.

CONSULT
We will listen to, acknowledge and
provide feedback on concerns and
aspirations for the governance
of your data.

EMPOWER
We will advise and assist in line with
your decisions about your own data
governance models.

Source: Ada Lovelace Institute

What is the role of data?

Data plays a key role in digital management
systems so you will need to understand the
importance of data and how it is used in
technologies at work.

The first two stages of a typical algorithmic
management system are:
› surveillance of workers using technology
and data collection
› a response to the data, either informing
or making a management decision.[6]

The Ada Lovelace Institute has proposed
this model (Figure 4) for involving people in
how their data is being used – they call this
participatory data stewardship.[7]

Based on this model, collective agreements
could contain provisions on data relating
to the right to be informed, consulted
and involved, along with methods
of collaboration between employers
and workers.

FIGURE 5: *The data lifecycle*
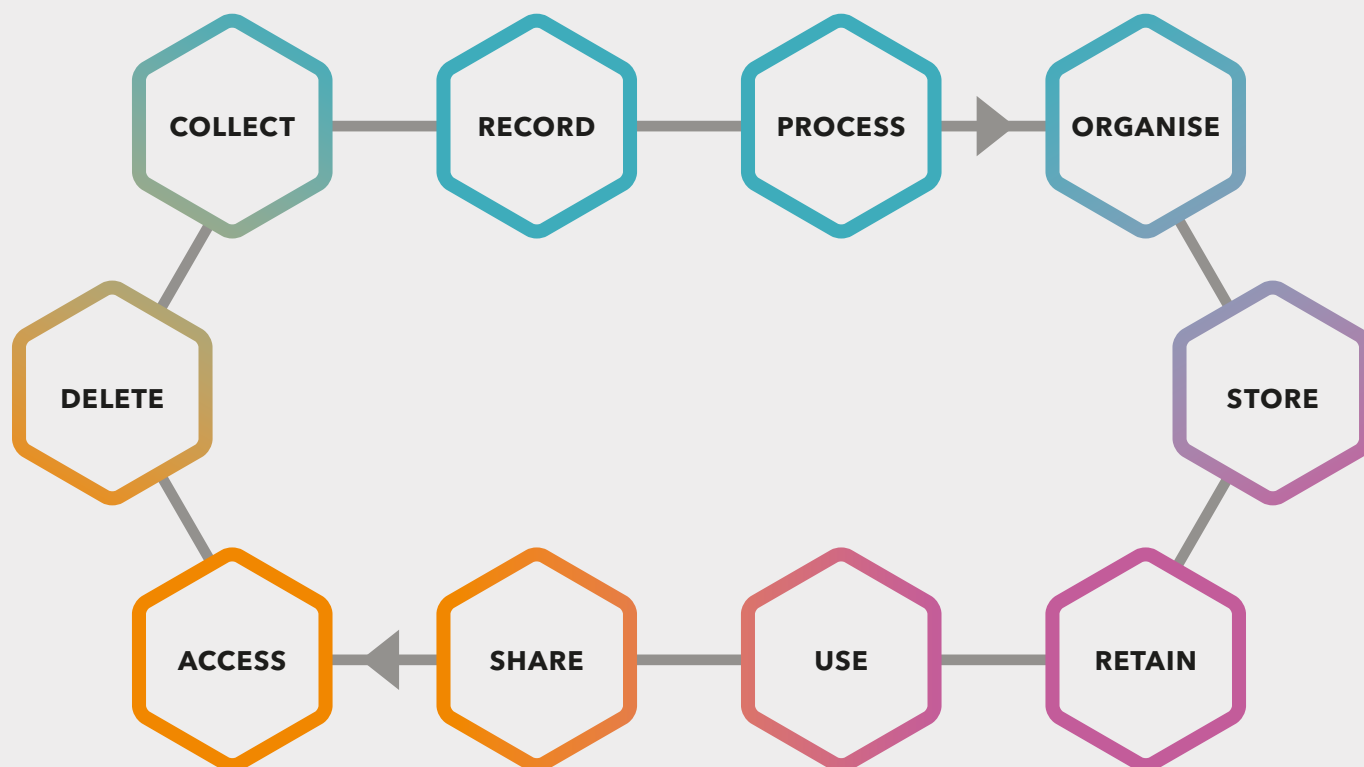
Source: Ada Lovelace Institute

The data lifecycle

The data lifecycle describes the different ways in which data is used in digital management systems.

It is useful to understand the data lifecycle and how workers and unions can influence each stage of the cycle.

The Ada Lovelace Institute's data lifecycle chart[8] breaks down how data is used once collected from a worker.

This lifecycle chart is very useful when considering how to address data in a collective agreement. You should question whether the data is always deleted, or if it is sold/sent on to a third party. Provisions may be needed to protect workers' interests at each stage of the lifecycle.

Once you've got the basics of how the technologies operate and the role of data, you could try practising explaining this to others. Then you will be ready to move on to Part 2 of this guidance.

BEFORE YOU START: UNDERSTAND THE IMPLICATIONS FOR WORKERS

This part of the guidance is to help you further develop your understanding of the impact on workers of digital management systems before you start getting ready to negotiate a collective agreement.

Action checklist: before you start – understanding and training

✓ *Understand the implications of being managed by technology.*

Implications for workers and unions

There are wide-ranging implications for workers and unions of the use of digital management systems.

The TUC has documented how the use of AI impacts on workers' mental and physical health, work and home boundaries, privacy, data protection rights and the ability to challenge decisions made about them.[9]

A digital management system may operate using data that results in a discriminatory outcome and the entrenchment of existing inequalities in society.

An example of this is where data may show that more women carry out childcare and caring roles than men, and an algorithmic decision is then made to only show job advertisements for a nursery assistant to women.

AMS can also exert control over workers, whilst enabling organisations to evade their employment responsibilities. An example of this is the technological control exercised over certain types of platform workers, allocating and directing their work without

their having the benefits and security of worker or employee status in law.

There is a danger that AMS deepens the imbalance of power in the workplace between employers and workers. Workers are less able to challenge decisions made by technology than decisions made by humans, especially if they do not have access to understandable information about how the technology works.

Although employers may benefit from cutting costs, the rewards of this are not necessarily justly distributed through higher wages, better conditions, training and development. Indeed, AMS can result in lower wages, work intensification, lower quality, and insecure work.

Digital management systems may also be used to collect data about other people, not just workers. For example, students, patients, clients and customers. This may impact on the relationship workers have with those they work with and on their role.

> 🦉 Consider the impact of AMS on individual workers, but also the systemic issues relating to AMS such as power, control, discrimination and just rewards. Which interests are being served by the AMS?
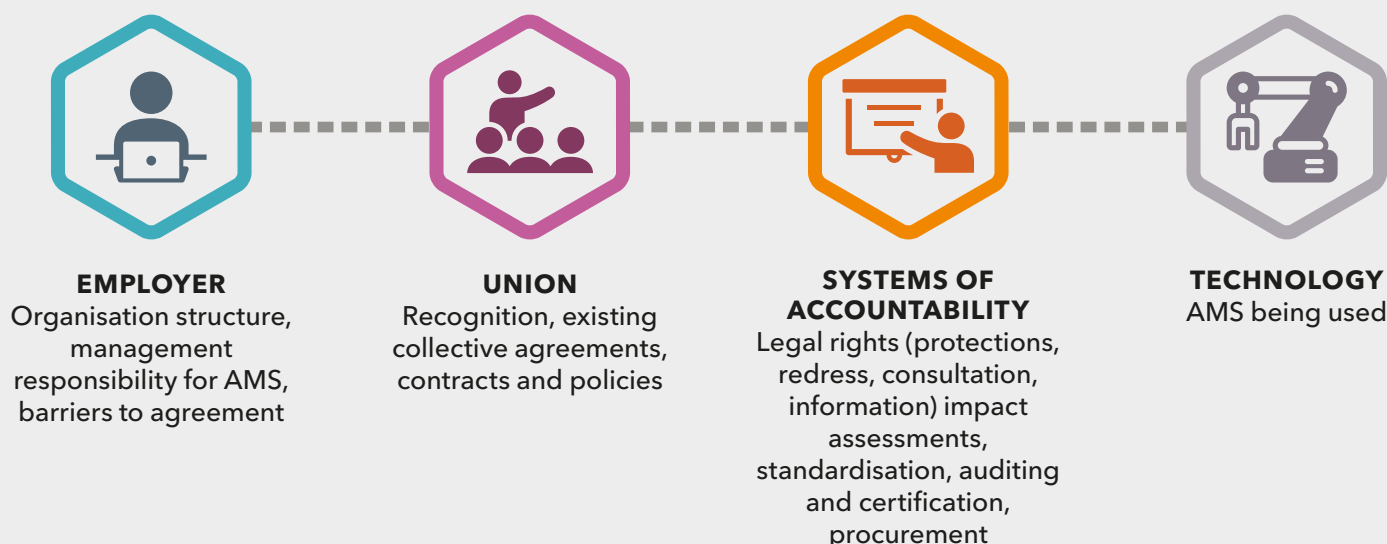
Look at the 'Further reading' section if you want to know more.

Once you feel confident that you have a basic understanding of what AMS is and why it matters for workers, you'll be ready to move on to assessing the context for collective bargaining.

GETTING STARTED: ASSESS THE CONTEXT

FIGURE 6: *Investigations*

EMPLOYER
Organisation structure, management responsibility for AMS, barriers to agreement

UNION
Recognition, existing collective agreements, contracts and policies

SYSTEMS OF ACCOUNTABILITY
Legal rights (protections, redress, consultation, information) impact assessments, standardisation, auditing and certification, procurement

TECHNOLOGY
AMS being used

This part of the guidance is to help you get ready to negotiate with an employer about the use of digital management systems.

Undertaking a full assessment of the context for the agreement before starting any negotiations will increase the chances of reaching an effective agreement.

This will involve investigation and planning.

These are the investigations you'll need to carry out.

Here's a checklist with questions to consider as you carry out your investigations.

Action checklist: getting started – assessment of context

✓ *Who is the employer, and do you have an organisational chart to help you understand the business? Which department and manager are responsible for deployment of the tool/ system?*

✓ *Is your union recognised by the employer for collective bargaining?*

✓ *Are there any existing relevant collective agreements, contractual entitlements, or workplace policies?*

✓ Has the employer met legal obligations governing AMS, such as those relating to health and safety, data protection, equality and human rights law, and including consultation and information rights? How has the employer documented compliance with legal obligations?

✓ Aside from legal rights and obligations, what are the other systems of accountability that interact with collective agreements? For example, algorithmic impact assessments and auditing processes.

✓ Are digital management systems already being used at work? Carry out an investigation. Map these systems, their data sources, categories and purposes.

✓ Are there any factors that are specific to your sector?

✓ What will the employer regard as barriers to a collective agreement? For example, will they be worried about intellectual property rights over the technology, or have concerns about revealing or breaching procurement contract terms?

Assess the context of the collective agreement to inform negotiations. Seek advice and training where needed.

1. Employer investigation

You'll need to establish a few things about the employer, including organisation structure, management responsibility for AMS and potential barriers to agreement.

Employer and organisational structure

A good first step is to identify the employer (this will not always be straight forward), as well as the department and manager responsible for the deployment of the AMS.

Try drawing up an organisational chart to help you identify the strategic priorities of the business. This will inform your negotiating approach.

You'll also need to find out how the relevant department and managers have oversight of the AMS, and who is involved in this process.

Barriers from employer perspective

You should list all the barriers to an agreement (as well as barriers to consultation or legal redress) from an employer perspective and plan how to overcome these.

An employer might argue:
› someone else owns the rights to the technology
› commercial agreements prevent it from providing information
› the organisation needs AMS in order to operate.

In addition, employers might believe technology cannot be wrong or may not understand how the technology operates themselves.

2. Union investigation

You'll also need to establish a few things relating to the union and agreements already in place, including union recognition, existing collective agreements, contracts and policies.

Union recognition status

If your union is recognised, you can undertake collective bargaining on behalf of your bargaining unit.

There may be another union with joint recognition, in which case you could consider the possibility of undertaking a joint negotiation – there might be an existing agreement about this.

FIGURE 7: *Systems of accountability*

Without collective bargaining and a collective agreement, you will be reliant on the other systems of accountability listed below.

However, if there are strong concerns amongst workers about technology in the workplace, this could prove to be an organising and recruitment opportunity. Union reps could use the issue to work towards recognition and a technology agreement.

Existing collective agreements, contracts and workplace policies

There might be existing collective agreements in place that already deal with some aspects of digital management systems.

For example, agreements on new technology, or agreements with provisions on older and established technology used for monitoring and surveillance.

These agreements might need to be amended, supplemented, or replaced.

There may also be provisions on digital management systems in contracts of employment or contracts for service, as well as workplace policies. You'll need to check these.

3. Systems of accountability investigation

Your biggest investigation will probably be setting out systems of accountability. You'll need to look into legal rights (protections, redress, consultation, information) impact assessments, standardisation, auditing and certification and procurement.

Being aware of these systems and thinking about whether and how to weave them into the agreement, will help you to plan effective negotiations.

Unions have a key role to play taking part in and scrutinising the effective operation of tools of governance and accountability. The agreement could acknowledge this role, as well as basic legal entitlements.

The legal and policy context for digital management systems is fast developing. This means it is especially important to ensure your knowledge is up to date.

List all the potential systems of accountability that are relevant to AMS and artificial intelligence. Decide how these can be integrated into a collective agreement to safeguard union and worker participation and influence, as well as highlight legal entitlements.

Legal rights

It's important to be aware of the legal rights of workers and unions when AMS is used or proposed at work.[10]

These are the types of legal rights it will help you to investigate and understand:
› Statutory consultation rights
› Rights to information
› Legal protections for workers and unions.

Having this awareness will help you hold the employer to account, ensure negotiations for a collective agreement go above existing legal requirements, and secure legal redress for workers when AMS goes wrong.

To hold employers to account, start by investigating how and whether the employer has documented compliance with legal obligations.

Workers may also need union assistance in enforcing their individual rights and seeking redress where AMS goes wrong. As in all circumstances where legal protections may apply, it is important that workers receive timely legal advice.

You'll have to make sure that any collective agreement does not fall below these legal standards. That could undermine existing legal rights.

A broad statement of legal rights in a collective agreement will remind everyone of rights and obligations that the employer must meet (and which you do not therefore have to renegotiate).

Unions can of course seek for a collective agreement to commit an employer to go beyond legal rights.

This could involve adding to existing statutory consultation procedures. For example, an employer could commit to always conduct an equality impact assessment as part of a statutory data protection impact assessment, and then publish the results.

We set out below some areas of the law (see the 'Further reading'- section below for more detail) that are relevant to consultation rights, rights to information, and protections for workers and unions.

Data protection

› Data protection rights of individual workers, as well as consultation rights under the UK General Data Protection Regulation (UK GDPR) will be very useful. Here are some examples.
› The lawful grounds for processing data (Article 6) which might help to challenge processing of worker data.
› Important protections against fully automated decision-making, including limited rights to human review and information when this takes place (Articles 21 and 22).[11]
› Rights to information and consultation under the data protection impact assessment consultation process (Article 35).[12]

> The right to an investigation (Articles 13 and 14) and to information under data subject access requests (Article 15).
> There may be scope to make use of data subject access provisions (Article 15), for example to obtain access to copy data impact and risk assessments.

Information and Consultation Regulations (ICE)

> There are important rights to be informed and consulted by the employer about possible redundancies and changes to terms and conditions of employment under the Information and Consultation of Employee Regulations (ICE).
> ICE also says that (where there are 50 or more employees) in specific circumstances, there's a right to request a formal agreement to be informed and consulted. The Acas guidance on ICE suggests this could include "working conditions, new ways of working, the output and quality of the business's goods or services, training, health and safety, new equipment, staffing levels and physical and mental wellbeing".[13]

Health and safety

> Health and safety legislation provides a range of protections, including risk assessment obligations and information requirements, that will come into play when AMS is being introduced at work.
> Think about how you can use provisions under the Management of Health and Safety at Work Regulations 1999, Health and Safety at Work Act and the Safety Representatives and Safety Committee Regulations 1977 that may apply to AMS. For example, in relation to work intensification.
> There may be obligations to consult with union health and safety representatives and committees (Safety Representatives and Safety Committee Regulations 1977).

Collective issues

> The Trade Union Labour Relations Consolidation Act 1992 (TULRCA) has various provisions relevant to collective agreements and bargaining, including the subject matter for agreements (S.178) and the employer's information disclosure obligations (S. 181). This is a potentially useful tool for trade union reps seeking to secure information about technologies.

> TULRCA also has requirements for consultation relating to collective redundancies which may be relevant (Part IV, Chapter II).

> Remember the right to freedom of association under the Human Rights Act 1998 if technology is being used in any way to supress this right.

Human rights

> The Human Rights Act 1998 provides important protections relating to privacy (Article 8), freedom of association (Article 11) and freedom of expression (Article 10), all of which may be relevant to the operation of AMS.

Equalities

> The Equality Act 2010 has important protections against the discriminatory operation of AMS.

> Public authorities must comply with the public sector equality duty under the Equality Act 2010. Equality Impact Assessments are used to facilitate and evidence compliance with this and are a useful tool.

Other employment rights

> Other employment law may be helpful. For example, unfair dismissal law where a termination of employment by algorithm takes place, and the implied duty of trust and confidence.

> It's also worth keeping in mind whistleblowing law (Public Interest Disclosure Act 1998) that protects some workers from unfair treatment if they report concerns like someone's health and safety being in danger, or failing to meet a legal obligation.

This isn't a definitive list as much depends on the circumstances. We strongly suggest seeking prompt legal advice if you think a member might have a legal claim.

But we also believe that employers should accept a degree of responsibility towards educating workers about the impact of AMS on their legal rights.

This approach features in the Wales Workforce Partnership Council managing digital change agreement:

PRINCIPLE 5: RESPECTING WORKERS RIGHTS

Interpretation

That the employment rights of workers are substantively acknowledged through the introduction of new digital technology.

Ask

That the introduction of digital technology does not adversely affect compliance with statutory employment rights and standards. That employers are proactive in ensuring workers' rights are safeguarded in the design and implementation of new technology. That workers and their trade union representatives are engaged at an early stage in order to understand how the implementation of new technology relates to statutory employments rights and standards.

Evidence

That employers, in consultation with trade unions, conduct a review of the impact of new technology on employment rights and standards and ensure workers are kept informed."[14]

> Build on existing legal and consultation rights in a collective agreement. Be aware of the rights to legal redress when AMS goes wrong.

Algorithmic impact assessments and auditing

Although data protection impact assessments and equality impact assessments can be used to analyse the effect and implications of AMS, there are many other aspects of AMS that merit investigation.

These include questions of diversity and inclusion, health and safety (including psychological impact), quality and enjoyment of work, and the dignity, trust and confidence of workers.

Algorithmic impact assessments are not currently mandated in UK law, but there is growing support for their use and a process like this, or algorithmic auditing, would cover a far broader range of issues than a data protection impact assessment.

An algorithmic impact assessment could, for example:
› Identify the person and groups of persons sharing a relevant interest
› Analyse the risks and impacts of the system including impacts on:
  – equality of opportunity, disparity of outcome and human rights
  – safety, privacy and security whether or not personal data is processed
  – good work[15]
  – any other adverse impacts identified in the course of the assessment process and/or subsequent monitoring.
› Include a technical audit
› Provide a statement of the period for wider consultation and process for stakeholder participation
› Identify potential adjustments or other steps that could be taken in response to the evaluation.[16]

The Canadian government has mandated for algorithmic impact assessments. The experience in Canada provides a useful insight into how algorithmic impact assessments operate in practice.[17]

The Dutch government has also mandated for human rights algorithmic impact assessments.[18]

Unless or until there is a legal basis for algorithmic impact assessments in the UK, unions and employers could collaborate to agree an algorithmic assessment process and provide for this in a collective agreement.

Unions could then reserve the right to call for an algorithmic impact assessment at any time from development, procurement and application, to following implementation of the technology.

The right to refresh and review an algorithmic impact assessment is also important, especially where machine learning is taking place. Impact assessments and auditing should not be a one-off process.

We hope to publish guidance on algorithmic impact assessments soon.

> Keep informed about new and developing systems of accountability for AMS, such as algorithmic impact assessments, auditing and standardisation.

Standardisation and certification

Technical standards are produced by technical bodies such as the British Standards Institute,[19] in order to determine the requirements that technologies, including AI and AMS, must meet.

At the moment, the use of standards in relation to artificial intelligence and AMS at work is a fast-developing area.

As standards are developed and beginning to apply to AI and AMS, employers will seek to obtain certification to show that their AMS and artificial intelligence systems meet the technical standards.

Unions should consider how they will input into this process. For example, how they will scrutinise the process of standardisation and certification and provide worker input.

Procurement

It is important to investigate the terms of the procurement of technology. For union reps in the public sector, you will need to consider any applicable rules governing procurement of technology and assess whether you need to take any steps to hold employers to account in this respect.

> Here are some questions you could ask about procurement of AMS:

› *Who designed the AMS and who owns it? Who are the developers and which company has sold it to the employer?*
› *What are the contractual arrangements between developer, vendor and the employer with regards to data access and control as well as system monitoring, maintenance, and redesign?*
› *What transparency measures can be established to ensure disclosure of any algorithms being used in the digital system?[20]*

4. Technology investigation

Once you have carried out an investigation of legal rights, you will need to establish the extent to which AMS have already been rolled out in the workplace.

This requires another type of investigation.

Community's bargaining guidance, *A Partnership Approach to the Use of Technology At Work* provides detailed advice on how to undertake a technology investigation.[21]

Here are some questions you could ask employers when investigating whether there are already digital management systems at work.

Technology investigation questions:

› *Are digital systems being used to recruit or manage people in this workplace?*
› *If so, in what parts of the organisation are they being used and in relation to which members of the workforce?*
› *What are the functions of the digital systems in operation?*
› *Are there any additional functions of the systems in place that are not yet operationalised, but could be in future?*
› *Who is operating the technology and who has responsibility for it?*
› *Are workers aware of the systems and have they, or their union, been consulted?*

If the employer fails to provide you with this information, you will need to consider statutory information rights. For example, you may be entitled to some or all this information under the UK GDPR, the Information and Consultation of Employees Regulation, or health and safety law such as the Safety Representatives and Safety Committee Regulations 1977 (see 'Further reading' section below).

You could also ask for this information as a disclosure request for the purposes of collective bargaining under the Acas Code of Practice.[22]

Once you have established the presence and extent of AMS already in operation at work, you can then investigate how the technology itself operates.

For examples of the questions you could ask to understand how the technology operates, see the 'Transparency and explainability' section later in this guidance.

Sector-specific issues

Sector specific issues will also need to be considered. This could include the demands of particular roles, and the different technologies used in different sectors or work.

For example, the digital management technologies used in a warehouse will be very different to those used in an office or a school.

In addition, the use of the technologies will impact on different people depending on context.
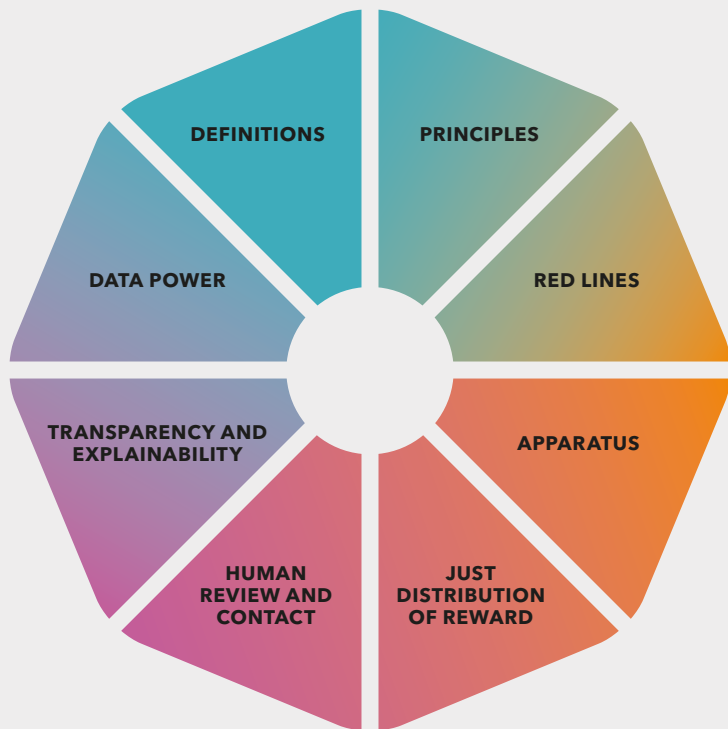
For example, in an education context, students and teachers may be subject to the same monitoring using facial recognition technology. In a social care context, residents in a nursing home and carers may be subject to the same tracking devices.

Despite differences in technologies between sectors, the logic behind the technologies and the impacts may nonetheless be similar.

NEGOTIATING AN AGREEMENT: KEY ISSUES

FIGURE 8: *Key issues*

Action checklist: negotiating an agreement – key issues

✓ *Think carefully about definitions – what and who (consider employment status and third parties) will be covered?*
✓ *Establish some general principles*
✓ *Draw clear red lines*
✓ *Create the apparatus needed – the institutions and roles*
✓ *Consider other accountability systems*
✓ *Ensure workers share in the rewards from greater use of technology*
✓ *Protect human review, contact and expertise*
✓ *Secure full transparency and explainability*
✓ *Introduce data power and control for workers.*

Definitions

Close attention will need to be given to the types of digital management systems covered by the agreement.

The technology

You will need to consider whether the agreement will apply to all AMS at work, or whether you will limit the types of systems to which the agreement will apply. For example, based on risk or potential impact.

We suggest defining the application of the agreement as broadly as possible. This helps workers and unions have influence over all AMS at work that involves use of worker data, the surveillance and monitoring of workers, and decisions affecting their terms and conditions.

If you have got to grips with the basics of how the technology works, the implications for workers and how to assess the context of the agreement, you are now ready to start planning what a collective agreement on AMS would look like.

Here is a checklist of key issues to consider dealing with in an agreement. Each of these is dealt with in more detail below.

In circumstances where the use of AMS is being addressed in a new technology collective agreement, AMS could simply be encompassed as a type of new technology being introduced at work.

However, AMS will already be in place in many workplaces and so will not necessarily fall under the terms of a new technology collective agreement. This means you'll need to consider introducing limitations and conditions on existing technologies, or making provision for their removal.

The terms of the agreement will also need to be flexible enough to ensure that as technology adapts and changes the agreement remains relevant.

A digital management system adapting and changing could include where machine learning takes place, when an existing AMS is used beyond the original agreed purpose, or an entirely new form of digital management system is developed.

Unions should pay close attention to ensuring that rights under the agreement are re-activated where a digital management system fundamentally changes or is used in a new way.

"The operation of the Trimble technology [a monitoring system] will be entirely in line with terms described in this joint statement. No other system capabilities or monitoring categories will be utilised unless expressly agreed by the National parties."
National Agreement Between Parcelforce Worldwide (PFW) and the CWU (Communication Workers Union) 25 August 2021 – Pilot Deployment and Use of Driver Behaviour Technology

Subjects

You'll need to think about who's going to be included in the agreement. In relation to the workforce, will the agreement apply to employees, workers, job applicants and the self-employed, as well as volunteers and ex-employees?

The use of digital management systems may also impact on service users and other third parties. For example, students, patients, visitors, customers and clients. Do you want to include terms in the agreement that relate to service users or other third parties who may be impacted?

Language
Be as precise as possible when communicating about technology both orally and in writing:

› *The Georgetown Law Center on Privacy and Technology has published guidance on the importance of using precise language about technology and has committed to use descriptive language instead of using the terms "Artificial intelligence, "AI," and "machine learning,".[23]*
› *It advises: "Be as specific as possible about what the technology in question is and how it works. For example, instead of saying "face recognition uses artificial intelligence," we might say something like "tech companies use massive data sets to train algorithms to match images of human faces."*
› *And "instead of saying "employers are using AI to analyse workers' emotions" we might say "employers are using software advertised as having the ability to label workers' emotions based on images of them from photographs and video."*
› *Be precise and descriptive in your language about technology. Focus on describing accurately what the technology is doing, and how it is doing this.*

Principles

General

An agreement could start with a statement of basic principles. For example, principles relating to:
› the protection or creation of jobs
› respect for human rights
› reinvestment of cost savings
› AMS only being introduced with consultation and agreement with the union
› preventing technology that serves to benefit one group of workers over another
› ensuring equal access to the benefits of AMS, for example, training systems
› introducing new technology to reduce working hours, but not pay.

Introductory principles can also recognise the potential for positive impact of AMS.

In response to the negotiated introduction of a new monitoring system, this statement featured in a CWU agreement:
"The purpose of this technology is designed to support individuals in achieving our shared objectives and should be seen as a positive experience that will identify opportunities for development through positive help, coaching and encouragement. The ethos will be based on correction and improvement, not punishment."
National Agreement Between Parcelforce Worldwide (PFW) and the CWU 25 August 2021 – Pilot Deployment and Use of Driver Behaviour Technology

Good work

The use of AMS can have a negative impact on workers and the quality of their work. In the circumstances, a statement of good work principles in the agreement can serve to contain the potentially negative impacts of AMS.

"Technology will not be used to de-humanise the workplace or operational decision making."
CWU RMG (Royal Mail Group) Key Principles Framework Agreement (the Pathway to Change) December 2020

Agreed principles for good work could include:
› sensible limits on hours of work and fair levels of pay
› fair and just productivity measures
› respect and dignity at work
› respect for human autonomy
› respect for human agency above technological control.

The Institute for the Future of Work has developed a good work charter and this could also be used as the basis for further principles of good work.[24]

Legal entitlements

No terms in a collective agreement should fall below, and therefore undermine, existing legal rights and obligations. This should be confirmed by the parties as a principle of the agreement.
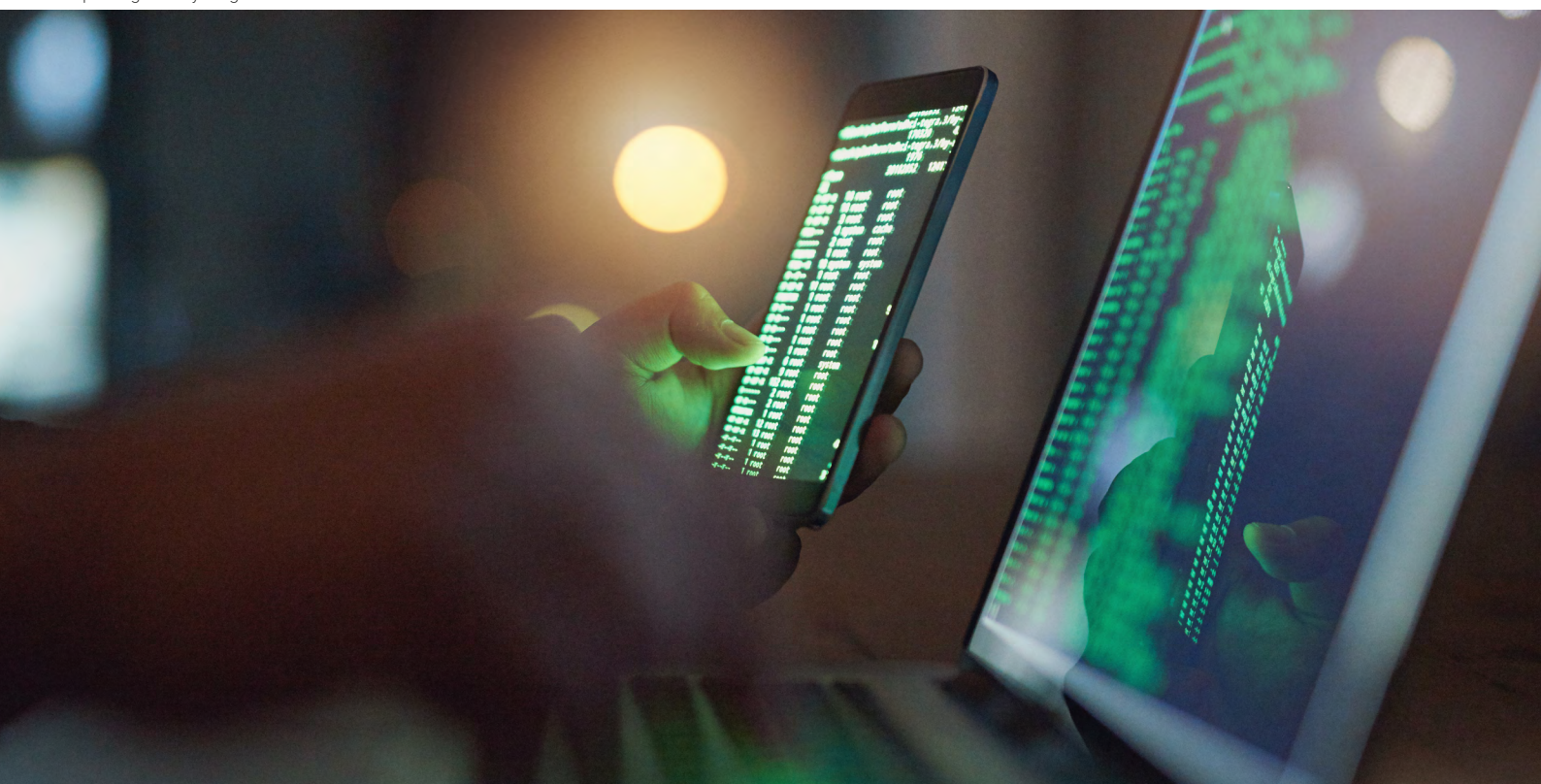
Red lines

A key provision in any collective agreement addressing algorithmic management will be red lines to ensure that harmful AMS cannot enter the workplace.

The red lines may be principles-based or may focus on specific technologies. The details will also vary depending on the type of work being undertaken and the sector.

Draw clear red lines. Some technologies may need to be outlawed from the workplace, or immediately removed.

Red line principles

In the TUC's and AI Law Consultancy's report *Technology Managing People – the Legal implications*,[25] Robin Allen QC and Dee Masters set out five key potential red lines:

"Explainable and understandable decisions. Employers should only be permitted to use AI and Automated Decision Making (ADM) to make important, high-risk decisions, about existing or potential employees and workers, where those decisions can be sensibly explained and understood by employees.

No discriminatory processing of data. Employers, and their agents, should not process the data of employees, workers and job applicants in a way which amounts to discrimination as understood within UK law.

Humans included in decision-making. Employees, workers, and their representatives should be part of the decision-making process undertaken by employers when determining the use of AI and ADM to make important decisions about the workforce.

Employers must disclose when ADM is used. Existing and potential employees and workers should readily be able to know what AI and ADM systems are being used in the workplace; the information should be available in easily accessible and intelligible form.

Information must be available. Existing and potential employees and workers should have access to sufficient information about the way in which AI and ADM operates in the context of the employment relationship to be able to satisfy themselves that the technology is being used in a way which is accurate, rational, non-discriminatory, proportionate, lawful, and ethical."

You could adapt these red lines according to your members' context and needs and consider widening the principles to include all digital management systems.

Outlaw technologies or functions

You can also consider drawing the red lines more specifically, by outlawing types and uses of digital management systems.

Community union's guidance on technology agreements[26] suggests drawing a red line in relation to fully automated decision making:
"The organisation and the union acknowledge the risks that ADM, including profiling, can present for workers. The parties agree that ADM should never be used where it may significantly impact on access to work, terms and conditions of work or quality of work. The technology forum may review this commitment on application of either party."

Alternatively, AMS with specific functions could be outlawed, such as systems that involve fully automated termination of employment, or the use digital systems to predict where a worker is going to exercise a legal right. For example, to assess where a worker intends to exercise their right to freedom of association.

Red lines can also be used to stop technologies being used beyond the originally agreed purpose. For example, you could say that agreed location tracking devices cannot be used for the purposes of performance evaluation.

The parties might also outlaw specific technologies. For example, emotion analysis systems, facial recognition technology or technology making predictions about human behaviour.

Technologies with specific impacts, such as negative impacts on equalities or mental health, could also be outlawed from the workplace.

Health and safety

We believe that no AMS should have a negative impact on workers' physical or mental health, or their safety.

Employers should respect the importance of clear work/home life boundaries. Without these boundaries, work intrudes on private life.

Workers report to us that they increasingly feel constantly scrutinised and monitored, which can lead to stress and ill-health.

Consider how you can reduce or outlaw technology with negative health and safety implications.

Unite's new technology agreement sets out that:

"New technology must comply with all relevant procedures to deal with health and safety issues."

"The employer agrees to inform the union of any potential impacts on the health and safety of workers that could arise from New technology."

"New technology risk assessments will be undertaken with the full involvement of all relevant union representatives."

Monitoring and surveillance

There is growing concern about intrusive and excessive monitoring and surveillance of workers.[27]

As explained above, monitoring and surveillance tools are a fundamental part of an AMS. However, there are long established workplace practices of monitoring and surveillance (such as the use of CCTV cameras) that have not historically formed part of an AMS.

In the circumstances, many unions and employers will already have in place policies and agreements relating to monitoring and surveillance at work which will be relevant to negotiations regarding AMS at work. These will address issues such as the right to privacy, data protection and maintaining home/life boundaries.

Take these policies and agreements into consideration and assess how they are applicable to current discussions and negotiations.

In relation to monitoring and surveillance used in AMS, the usual limitations should be drawn to protect privacy, health and safety and work/home boundaries.

Employers have strict legal obligations in relation to surveillance and monitoring and these should be stipulated, but the agreement could expressly outlaw specific types of surveillance and monitoring or ensure that any of these technologies are subject to consultation and scrutiny by the union.

For example, Community[28] suggests: "All technology capable of surveillance or monitoring of workers will be considered and approved by the technology forum. Details of the model, functions, purpose, and all proposed applications must be considered. Further, the parties acknowledge that:
› work 'intensification' will be kept under review
› workers' performance will not be judged or predicted by surveillance or monitoring technologies without express and informed agreement
› workers will not be monitored in changing areas or toilets
› rest and toilet breaks will not be monitored
› communications between workers and their union representatives or union staff will not be monitored. Nothing in this agreement will affect rights and obligations in law or made pursuant to any other applicable agreement. Both parties understand that the legal obligations which an employer has, or the legal rights a worker has under the negotiation."

Right to disconnect

Limits on monitoring can also be established using a right to disconnect from digital devices and work and not to receive any communications outside of working hours.

The Irish government describes the right to disconnect in recent guidance as including three key principles:
› "The right of an employee to not routinely perform work outside normal working hours"
› "The right not to be penalised for refusing to attend to work matters outside of normal working hours"
› "The duty to respect another person's right to disconnect, eg by not routinely emailing or calling outside normal working hours."[29]

A separate agreement detailing the terms of a right to disconnect may be needed. For further information on this, Prospect[30] has produced detailed guidance on the right to disconnect.

Apparatus

Institutions

The agreement should include the apparatus needed to facilitate worker participation in the co-governance of AMS.

This will include the institutions and arrangements required for the purposes of consultation, negotiation and the provision of information.

For example, the agreement could set out different levels of committees, the types of representatives needed and their function, other relevant roles such as technology experts, and how this system will be funded.

Unite's new technology agreement provides for the following apparatus:

- "A negotiating committee responsible for consultation and negotiation on new technology issues with the right to draw on expert assistance as it sees fit.
- A new technology sub-committee formed from designated shop stewards as decided by the union and responsible for information regarding new technology issues.
- New technology representatives designated by the union… entitled to facility time… members of the NT Sub Committee and specialising in workers issues relating to new technology.
- A new technology fund set up by the employer with the agreement of the union for the purpose of funding and disseminating the work of the NT Sub Com and the NTRs".

The apparatus could include sub-committees considering specific issues. For example, an 'algorithm committee' or a 'data committee'.

"Prospect members at BT Group have established a data rights sub-committee to focus attention and expertise on data driven processes and technologies being introduced by the employer. This has resulted in useful assurances and rules around the company's use of monitoring data and machine learning to analyse and redesign workflows."[31]

An algorithm committee would be dedicated to considering issues relating to algorithmic functions at work.

UGT and CCOO negotiated the use of an Algorithm Commission in their 17 December 2021 agreement with Just Eat: "The parties agree to create a joint commission through which the right to information provided for in this section shall be channelled…and subsequently it shall be informed of any substantial changes made to the algorithms and/or systems. For the purposes of completing the right to information, the Algorithm Commission's representatives may request

the appearance of the person responsible for the supervision of the algorithm and/or artificial intelligence system under review."

Experts

An external technology expert may be very useful for workers and unions. The agreement could make provision for this.

The Germany Works Council Modernisation Act[32] established co-determination rights of works councils over software making conclusions about behaviour and performance. Employers in Germany are obliged to pay for an expert to help works councils assess the introduction of the use of AI and the works council can also agree a permanent expert advisor.

> Collaborate with others, especially technologists.

The project cycle

Using this apparatus, the parties can work together to ensure oversight of a project proposal to introduce AMS. Within the project framework, unions and workers can influence the introduction or otherwise of digital management.

> This project oversight should include:

- *joint negotiation of the necessity, purpose and proportionality of the project*
- *agreement on the tools and applications to be used*
- *agreement on the design of the implementation*
- *co-execution of the plan*
- *monitoring the implementation and carrying out adjustments*
- *negotiation of what to do with the capital rewards of the AMS.*[33]

CWU negotiated full involvement in a telemetry project cycle in their agreement with Parcelforce:

"The CWU will have full involvement at all levels to realise the full benefits of telemetry, and it is agreed the CWU will be involved in any monitoring, assessment and profile adjustment activities where agreed necessary, Parcelforce will provide training opportunities to the local CWU representatives to give them the same system overview as the depot managers." National Agreement Between Parcelforce Worldwide (PFW) and the CWU – Pilot Deployment and Use of Driver Behaviour Technology 25 August 2021.

Proposal responses

The agreement could provide for a range of potential union/worker responses to a proposal, facilitating the role of the technology committee as a gatekeeper to the introduction of the AMS.

Potential union/worker responses to an AMS project proposal:

› *Accept the AMS as presented*
› *Require more information*
› *Ongoing monitoring and scrutiny*
› *A right to trial for a set period and a further stage of negotiation depending on outcome, as well as a re-triggered right to trial where the AMS is used beyond original purpose or evolves and changes.*
› *Postponing adoption pending an algorithmic impact assessment*
› *Adjustments to an AMS to resolve any negative impacts, including adjustments to the output, variables and weighting of variables used in the system*
› *Outright rejection.*

An example of the right to trial in a collective agreement:
"RMG and CWU will consult fully on the aims and objectives of proposed new methods, technology or automation at the concept design stage. A trial will be designed to seek to validate the proposed change. A terms of reference will describe the content, location and success criteria. Timescales of the trial should be expedient and will not exceed 90 days. When success criteria are demonstrated as met, this will trigger deployment, subject to business case approval."
CWU RMG Key Principles Framework Agreement (the Pathway to Change) December 2020

Sharing rewards

You will also need to consider how the agreement can provide for the rewards of technology to be shared fairly.

Training

The UNESCO recommendation on ethics of AI[34] sets out that member states should support collaboration agreements among governments, universities, industry, training institutions and workers organisations to provide skills and training programmes.

A collective agreement could provide for the funding of training curated jointly by unions and employers:
› Training for managers on how to use the AMS. Managers will be key to successful implementation and communication about the AMS. In addition, managers are of course workers whose role and job quality also merit protection. Unions should input into proposals for this type of training and consider impacts of AMS on managers from a worker/union perspective.
› Training for trade union reps on how to negotiate on issues relating to data and AMS at work with paid time off work for this.
› Training for workers to raise awareness of what AMS are, when they operate, the implications, how personal data is being used, and why this matters.

In the Public Services International (PSI – the global union confederation of public services workers) guidance on digitalisation in public services, Christina Colclough recommends employers commit to a "people plan" when they allocate an investment budget for AMS:[35]

› "Create and enforce a people plan
› When investing in new technologies, create a people plan
› Map the current workers' skill profiles
› Co-determine re and upskilling requirements
› Offer courses in working time, as part of working time
› For displaced workers, co-develop career development plan
› Work with employment agencies and other companies to help the individual onwards
› This people plan should be conducted throughout the supply/value chain of the company."

More and better jobs

Cost savings from AMS could also be re-invested through the creation of more and better jobs, jobs of higher quality, with greater reward and higher pay.

"Unite's New Technology Agreement commits the employer to re-investment of cost savings:

The employer will re-invest cost savings from any introduction of New Tech into areas that promote and provide more and better jobs within the organisation

It is agreed that wherever relevant new tech will be used to reduce working time, not pay, and create new jobs."

Identify and articulate ways in which the rewards from the use of AMS can be redistributed to benefit workers.

Human review

Think about how to maintain accountability for decisions made by technology and the importance of defending human expertise. Challenge the idea that technology is always the best solution. Sometimes it will be, but sometimes human analysis and expertise is best.

The right to human review of decision made by technology goes to the very heart of accountability. Employers must take full responsibility for decisions made by technology.

There are existing legal entitlements to human review under data protection legislation (see above). However, a collective agreement should go beyond this and seek to secure a comprehensive and universal right to human review.

When negotiating on human review bear in mind that human review can be relevant at multiple stages relating to AMS. For example, when assessing system-level impacts, when reviewing individual decisions, and when there is human involvement in significant decisions, such as hiring and firing.

Human review is also relevant to preventing the de-skilling of managers. If managers cease to exercise decision making in relation to workers, there is a danger that they may lose the ability to exercise ethical judgement in the workplace. We believe this expertise needs to be protected and preserved.

Frank Pasquale has written about the four rules of robotics to protect human expertise in his book, *The New Laws of Robotics*.[36] These include that robotic systems and AI should complement professionals, not replace them.

Human contact

In-person engagement is important in many ways, including forming and maintaining relationships and communication channels.

An agreement could provide for a right of workers to in person engagement, especially when important decisions are being made about them.

In the context of the introduction of a new monitoring system, CWU focused on the importance of conversations with drivers: "Both parties encourage supportive conversations in the daily de-brief sessions between drivers and the Transport DRP role with the aim to improve driver behaviours and efficiency where required." National Agreement Between Parcelforce Worldwide (PFW) and the CWU- Pilot Deployment and Use of Driver Behaviour Technology 25 August 2021

It is also critical that technology does not disrupt the relationship between workers, managers and union representatives, or the exercising of collective rights and freedom of association.

Preserving lines of communication and influence:

"RMG also confirm that technology will not replace the need for consultation and negotiation as outlined in the Industrial Relations Framework. Therefore, the use of technology is designed to support more informed discussions between RMG and CWU, and not replace them in any shape or form. As such both parties reaffirm that the key relationship in all operational decision making on a daily, weekly or longer-term basis will remain that between the local manager, and local representatives.

Technology will be used to complement, inform and enhance along with all other factors, the existing resourcing processes, including manager, CWU rep and employee conversations."

CWU RMG Key Principles Framework Agreement (the Pathway to Change) December 2020

Transparency and explainability

It should be clear to people when technology is being used to make decisions about them at work. The way in which these decisions have been made must also be easy to explain and understand.

And there should be enough information available to workers and job applicants about the technology to ensure they can trust it will operate fairly.

Otherwise, it will be impossible for workers to challenge unfair and discriminatory decisions made by technology, or to know when inaccurate or misleading data has been used.

There are some existing and limited legal rights to transparency and explainability under data protection and other law (see 'Systems of Accountability' above and 'Further reading' section below), but the agreement should go beyond these.

Register

To ensure that a worker has ready access to information about how AI and AMS are being used in the workplace employers could commit to maintain a register which contains this information, updated regularly.

This register should be readily accessible to existing employees, workers, and job applicants, including employees and workers that are posted to sites controlled by organisations other than the employer.

Personalised statement

The agreement could also provide for a right to a personalised explanation for individual workers subject to an AMS, setting out clearly how an AMS has been applied to them, along with a readily accessible means of understanding when these systems will be used.

General awareness

There are already some examples in existing collective agreements of the right to be informed about the operation of technologies.

Here are some examples of where unions have reserved a right to be informed about the operation of technologies:

"The companies shall inform [the union] about the use of data analytics or AI systems when the decision-making process in the field of human resources and labour relations are based exclusively on digital models without human intervention. Such information shall, at a minimum, cover the data that feeds the algorithms, the logic of operation and the evaluation of results" Resolution of March 17th 2021 of the Directorate General of Labour, whereby the XXIV Collective Bargaining Agreement of the banking sector is registered and published. CCOO, FeSMC-UGT and Federacion de Banca de FINE (translated from Spanish).

"The company shall inform the legal representatives of the workers about the use of algorithms or artificial intelligence systems for decision making in the field of human resources and labour relations, provided that such decisions may have impact on working conditions, access to and maintenance of employment of workers, including profiling... in the above case, the company shall provide information on both the parameters and data as well as on the rules and instructions that feed the algorithm/AI systems for

the purposes of organising their [work] such as type of contract, number of contractual hours, time preferences of the delivery personnel."

Minute of agreement 17 December 2021, in relation to the mediation procedure by CCOO, FSCCOO and FeFSC-UGT and Just EAT (translated from Spanish)

AI not human

Another of Frank Pasquale's rules of robotic systems is that AI should not pretend to be a person, and that robotic systems and AI must always indicate the identity of their creator(s), controller(s), and owner(s), to ensure responsibility for outcomes.[37]

In Spanish unions' CCOO/UGT agreement with Just EAT, they agreed workers would always be informed of digital tools present in the workplace, and if they were dealing with a chat box:

"Both the algorithm committee and each employee of the company shall be informed in an appropriate manner of all digital work tools that exist in their work environment and of the possible risks to their health and safety, environment and the possible associated health risks. Likewise, when employees establish a conversation, they must be informed in advance if they are talking to a chatbox or a person...conversations made by a chat box may not be used to discipline a person."

Minute of agreement 17 December 2021, in relation to the mediation procedure by CCOO, FSCCOO and FeFSC-UGT and Just EAT (translated from Spanish).

Specific information rights

It is likely that you will need specific information about the AMS to fully understand how it is operating.

We have presented here some ideas for the information you could secure a right to in a collective agreement. This information should help you to understand how the technology operates, but you may need to add to this list depending on the situation.

Remember you should also ask the basic questions we highlighted in the investigation stage above.

Information needed about the AMS:

› *the programme developer and implementer of the system*
› *description of the objectives of the system*
› *details of the training data and data sources (see data information list below)*
› *details of the variables used and how they have been weighted or prioritised*
› *information on the performance of any impact study and/or independent external audit (and access to its result)*
› *assessment of the percentage of false positives and false negatives expected or identified by the developer*
› *any proposals for evaluation and adjustments if risks or harms are identified.[38]*

Information needed when AI is used

If artificial intelligence is in operation as part of the AMS, you will also need information about the following:
› *the stages of any machine learning taking place*
› *how the problem has been defined*
› *the data being used*
› *a summary statistics review*
› *data partitioning (including the model used for selection, training and deployment).[39]*

Intellectual property

Employers and technology companies may claim that they cannot provide full transparency over how a digital management system is operating because they have a right to keep their technology safe from being copied.

This may become a point of negotiation (subject to legal entitlements). You could, for example, seek agreement that workers' rights to transparency and explainability will be given priority over intellectual property rights in certain circumstances.

Data

Given that data fuels and informs AMS, the use of data must be addressed in an agreement dealing with AMS. Indeed, the topic of data may merit an entirely separate agreement with detailed terms.

To understand the operation of AMS and how decisions impacting on workers have been made, unions and workers will need access to detailed information about data, operating within the data lifecycle stages outlined above.

Training

We believe workers are entitled to be educated about the value of personal data, how this is used by their employer, and how data is used to inform AMS. They should also have control and influence over how their data is used.

To successfully negotiate about data, workers and union representatives will need access to training programmes on the use of data in digital management systems.

Employers could support this training need by re-investing some of the rewards of AMS into data training programmes for workers.

Data protection rights

When digital management systems are operating at work, employers must comply with relevant legal rights and obligations under the UK General Data Protection Regulation (UK GDPR).

Rights under the UK GDPR, including participation in data protection impact assessments, will need to feature in a collective agreement on AMS and you should build on these rights.

Please see the 'Legal Rights' and 'Further reading' sections for more information on data protection rights and impact assessments.
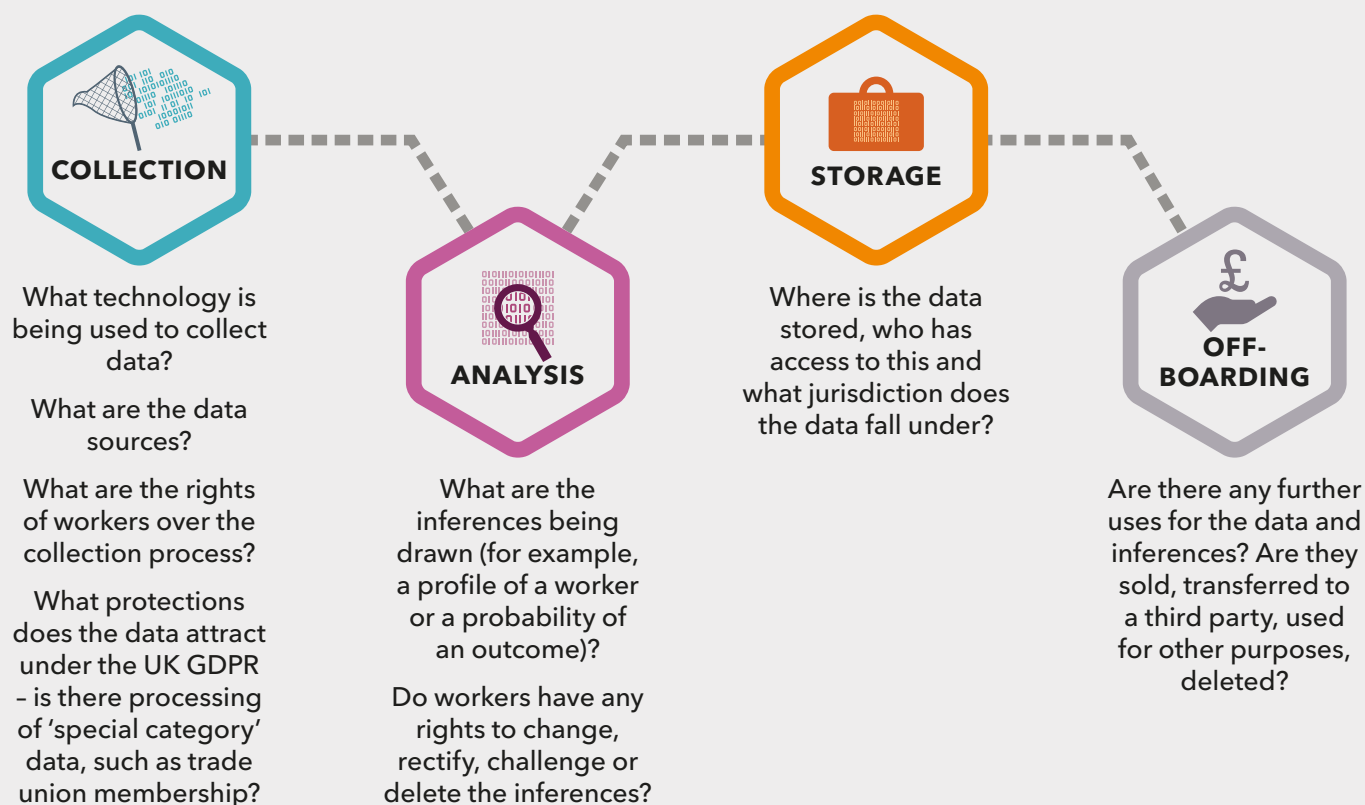
Procedures and safeguards for data

There should be a commitment in the agreement to effective procedures and safeguards relating to worker data. This could include provisions on:
- › *the collection of worker data*
- › *how it is stored*
- › *whether and how it is shared*
- › *how the employer will ensure that the data is fair and accurate*
- › *assurances that workers will not be subject to detriment where inaccurate processing of data*
- › *how the data is used*
- › *restrictions on use beyond the original agreed use or on the employer selling the data.*

"Driver performance data will remain confidential to the individual and will not be displayed on notice boards or in league tables nor will it be used for individual performance management."
National Agreement Between Parcelforce Worldwide (PFW) and the CWU- Pilot Deployment and Use of Driver Behaviour Technology 25 August 2021

FIGURE 9: *Data information checklist*

COLLECTION

What technology is being used to collect data?

What are the data sources?

What are the rights of workers over the collection process?

What protections does the data attract under the UK GDPR – is there processing of 'special category' data, such as trade union membership?

ANALYSIS

What are the inferences being drawn (for example, a profile of a worker or a probability of an outcome)?

Do workers have any rights to change, rectify, challenge or delete the inferences?

STORAGE

Where is the data stored, who has access to this and what jurisdiction does the data fall under?

OFF-BOARDING

Are there any further uses for the data and inferences? Are they sold, transferred to a third party, used for other purposes, deleted?

Christina Colclough in the PSI guide, *The Data Life Cycle at Work*,[40] highlights the types of questions that need to be asked by union reps at the various stages of the data lifecycle.

Data information checklist

Figure 9 shows a checklist of questions relating to data in digital management systems. These can be used to secure access to the information in a collective agreement, or to inform discussions with an employer.

Worker defined metrics

Once you discover the metrics being used in an AMS you may realise these are unfair. You should consider whether workers can define the metric themselves and put this forward as an alternative to be adopted by the employer and the AMS. You might need to engage a technology expert to help you with this.

Data power

You could consider ways to redress the imbalance of power over data in the workplace, placing a new focus on the importance of worker control over their own data and collective data rights.

Keep in mind that the UK GDPR imposes a framework of responsibilities and obligations towards data controllers. If unions play a greater role in collectivising data, this may bring with it additional responsibilities for them under the UK GDPR which your union will need to consider.

Data reciprocity

Data equality and justice is a principle that all modern, forward-looking workplaces should support. There is an increasing public expectation of equal power and rights over data, and we believe this should be reflected in the workplace.

As employers collect and use worker data, workers could have a reciprocal right to collect and use their own data.

Consider ways in which employees and workers could collect and combine their workplace data.

In 2019, after negotiations with unions, Northumbrian Water Group gave fleet drivers access to their location and tracking data, in return for agreeing to a telematics system.

CONCLUSION

There is widespread recognition of the need for multi-stakeholder input throughout the life cycle of AMS and artificial intelligence.

For example, the UNESCO Global Recommendations on the Ethics of AI (economy and labour policy area 10) November 2021,[41] highlight the importance of multi-stakeholder participation.

In its report *The New Frontier: AI at work,*[42] the APPG for the Future of Work recognised, "the most egregious examples of workplace surveillance and abuse of AI are happening in workplaces that unions have been unable to access" and recommended that:

› unions are supported in accessing physical and digital workplaces
› unions be allowed to develop new roles within the AI ecosystem to redress a growing imbalance of information and power and help deliver genuinely human-centred AI in the public interest
› the government enables a partnership approach in the AI ecosystem and creates a government fund to help the TUC develop and deliver AI training to workers
› unions could help run algorithmic impact assessment pilots through technology forums.

This guidance shows how collective agreements can provide for effective multi-stakeholder input into the use of AMS. Unions have a key role to play in the governance of AMS, but they must be supported in this through funding for training, as well as workplace and digital access.

The social partnership model, with strong support for the role of trade unions and other stakeholders, is the most effective way to ensure that technology benefits society and not just commercial interests.

Using this approach, we believe it is possible to achieve people powered technology at work – technology with human interests at heart - ensuring that everyone benefits from the rewards of innovation.

GLOSSARY OF TERMS

Algorithm

An algorithm is a mathematical rule. Algorithms are used in many different contexts. Algorithms used in technology are often a set of rules applied by a computer to come to a decision.

Artificial intelligence

AI means when computers carry out tasks that you would usually expect to be completed by a human.

The way in which AI is generally operates is with rules-based algorithms that have been given instructions by a human like "if this .... then that..."[43] The algorithms produce decisions and other outputs.

For example, "if the worker falls below this productivity target, then implement that disciplinary measure."

Aside from algorithmic management, there are many other ways in which algorithmic decision-making and artificial intelligence can be used at work.

For example, algorithms may be used to make decisions about access to social security benefits, healthcare, student performance in an education setting and access to justice.

AI may also be used for other aspects of a role, not just decision-making.

For example, using performers' images or voices for AI-driven products such as synthetic voice.[44]

These other uses of AI and algorithms at work give rise to additional issues (such as impact on role and job quality) we do not address in this guidance.

Automated decision making (ADM)

ADM is when decisions are made about people, or conclusions reached, and there is not any direct human involvement in this. An example of this is the automatic issuing of a speeding fine where a camera has picked up on a speeding offence.

However, sometimes, the term ADM is used to describe an AI system even though there is some limited human involvement in the process. This might be where a human undertakes a task in the decision-making process, such as progressing the machine led output in some way or providing 'tick box' approval without real engagement or analysis.

Data

Data is like the fuel for AMS and AI. Data is used to train the algorithms used in AMS systems and to enable predictive models to be developed by picking up patterns in the data.

Inferences

The profiles – the statistical probabilities – taken from algorithmic systems.

Machine learning and predictive models

Machine learning is a type of AI. In machine learning, there are not the clear "if this...then that" type instructions for the algorithm. The algorithm has data, a goal and some parameters, but it works out how to achieve the goal using data analysis and experience.

Machine learning is when computer programmes are trained on data and learn to carry out tasks (like making decisions), based on patterns in the data. The conclusions that can be drawn from these data patterns are called predictive models. Predictive models are generated by machine learning using historic data. These models enable AI decision-making.

Metrics

The measurements used, for example, to calculate a productivity rate.

Value chain

The AI value chain is the term used to describe the different stages in the creation and application of AI. These stages include:

› **Development.** This is when software developers employed by tech companies create the code that forms the basis of the AI. Data is gathered and machine learning takes place to create an AI-powered tool.
› **Procurement.** This is when employers purchase AI-powered tools and platforms.
› **Application.** This is the roll-out of the new technology into the workplace by the employer. Key actors in the AI value chain include technologists (developers/coders/software engineers), tech companies and employers.

There are usually two 'users' of the technology – the employer and the worker. AI can also be used to monitor the action and movements of service users such as students in universities or patients accessing health services.

Worker

The use of the term 'worker' in this guidance is not intended to attach to it the legal connotations of employment status, but rather worker in the general sense, such as those who are engaged in any form of work for the employer organisation.

FURTHER READING

TUC AI project

This guidance is part of a TUC project looking at the use of AI and automated decision making at work. It is not a definitive guide, but rather part of a growing body of work in a fast-developing new field.

The guidance is intended to build on the introductory TUC report, *When AI is the Boss.* We advise reading this publication as it is an important introduction to the terminology and themes we address here.

For more background, you can also refer to our *research, manifesto and legal report.*

Digitalisation and unions

Co-Governance of Algorithmic Systems – a guide (The Why Not Lab)

Digital Technology: a guide for union reps (Prospect)

Digitalisation: a union action guide for public services, work and workers (PSI)

Digitalisation website (PSI)

Technology Agreements: a partnership approach to the use of technology at work (Community)

The Why Not Lab

Training Material: our digital future (PSI)

Using Data to Build Strong Unions (Unions 21)

Legal rights

In relation to the areas of law mentioned below, please also see *Technology Managing People – the legal implications (Robin Allen QC and Dee Masters)*

Data protection

Data Protection Impact Assessments: a union guide (Prospect)

Guidance on automated decision making (ICO)

Guide to the GDPR (ICO)

Know Your Data Protection Rights (Community)

Report on automated decision making (FPF)

Information and Consultation Regulations

Guidance on the Information and Consultation Regulations (Acas)

Health and safety

Artificial Intelligence for Worker Management: an overview (European Agency for Safety and Health at Work)

Health and Safety Executive (HSE)

Making Algorithms Safe for Workers (SSRN)

Risk Assessments (HSE)

Safety Representatives and Committees Regulations 1977 (gov.uk)

Human rights

Equality and Human Rights Commission (EHRC)

European Convention on Human Rights

Unfair dismissal

Guidance on unfair dismissal (Acas)

Automated Dismissal Decisions, Data Protection and The Law of Unfair Dismissal (Philippa Collins)

Equality

Guidance on Equality Act (EHRC)

Collective rights, including the right to freedom of association

Guidance on freedom of association (EHRC)

Whistleblowing

Guidance on whistleblowing (EHRC)

Guidance on whistleblowing (ICO)

Public Interest Disclosure Act 1998 (gov.uk)

AI at work

Algorithmic Impact Assessments: building a systematic framework of accountability for algorithmic decision making (IFOW)

Altheia Framework (Rolls Royce R2 Data Lab)

Ethics in the Digital Workplace (Eurofound)

Guidance on algorithms in the workplace (Spanish Ministry of Labour)

Stop AI Stealing the Show (Equity)

The Amazonian Era (IFOW)

Understanding Technology and Automation (Usdaw)

Technologies

Countermeasures: the need for new legislation to govern biometric technologies in the UK (Ada Lovelace Institute)

Surveillance polling (GMB/IER)

Algorithms

Algorithmic Impact Assessments: a case study in healthcare (Ada Lovelace Institute)

Example of an algorithm register (Amsterdam Algoritmeregister)

Piloting the UK algorithmic transparency standard (gov.uk)

Collective bargaining

A Stronger Voice for Workers (TUC)

Good Jobs for All in Changing World of Work (OECD)

Report on collective bargaining (ILO)

Report on collective bargaining (OECD)

Right to disconnect

Guidance on the right to disconnect (Prospect)

COLLECTIVE AGREEMENTS

CWU RMG Key Principles Framework Agreement (the Pathway to Change) December 2020.

National Agreement Between Parcelforce Worldwide (PFW) and the CWU – Pilot Deployment and Use of Driver Behaviour Technology 25 August 2021.

Unite The New Technology Agreement.

CCOO/UGT and Just EAT (translation from Spanish) Minute of agreement 17 December 2021, in relation to the mediation procedure by CCOO, FSCCOO and FeFSC-UGT against Just EAT.

Workforce Partnership Council Agreement, Partnership and Managing Change, November 2021, Annex 1: Managing the Change to a Digital Workplace.

Resolution of March 17th 2021 of the Directorate General of Labour, whereby the XXIV Collective Bargaining Agreement of the banking sector is registered and published: CCOO, FeSMC-UGT and Federacion de Banca FINE.

REFERENCES

1   *https://www.tuc.org.uk/sites/default/files/When_AI_Is_The_Boss_2021_Reps_Guide_ AW_Accessible.pdf* will give you useful background and help with the terminology and themes we address here.

2   For a more detailed definition see: Mateescu, A and Nguyen, H (2019) *Algorithmic Management in the Workplace,* Data and Society *https://datasociety.net/wp-content/ uploads/2019/02/DS_Algorithmic_Management_Explainer.pdf*

3   *https://publicservices.international/resources/publications/digital-rights-organiser--- training-material-eu-na-ca?id=11908&lang=en*

4   Lee, M K, Kusbit D, Metsky E and Dabbish L. (2015) "Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers", in *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems,* 1603–1612. CHI '15. New York: ACM. *https://doi.org/10.1145/2702123.2702548*

5   *https://www.tuc.org.uk/AImanifesto* and *https://cep.lse.ac.uk/_new/publications/ abstract.asp?index=8632*

6   *https://datasociety.net/wp-content/uploads/2019/02/DS_Algorithmic_Management_ Explainer.pdf*

7   Ada Lovelace Institute (2021) *Participatory Data Stewardship.* *https://www.adalovelaceinstitute.org/report/participatory-data-stewardship*

8   Ibid.

9   *https://www.tuc.org.uk/AImanifesto* and *https://www.ifow.org/publications/the- amazonian-era-the-gigification-of-work*

10 Please note this guidance is not legal advice, and you may need to contact your union for this. The TUC's legal report, commissioned from Robin Allen QC and Dee Masters of Cloisters chambers sets out some of the relevant laws and is a useful starting point. See also the Further Reading Section at the end of this guidance *https://www.tuc.org.uk/ sites/default/files/Technology_Managing_People_2021_Report_AW_0.pdf*

11 At the time of writing, the government had just published the Data Protection and Digital Information Bill: *https://bills.parliament.uk/bills/3322* If this bill is enacted in its current form, there will be changes to data protection rights under the UK GDPR . This guidance is based on the current legislation, but the drafting of the new bill suggests that there may be changes to Article 22 of the UK GDPR. You will need to check you have the latest data protection legislation and the extent of the protection in relation to ADM and human review.

12 As at 10, the new data bill may also result in changes to the data protection impact assessment process. In its current form, the bill provides for an 'assessment', but removes the need to seek the views of data subjects or their representatives. Therefore, if enacted, this bill may significantly reduce the usefulness of DPIAs.

13   https://www.acas.org.uk/informing-and-consulting-with-your-employees-about-workplace-matters

14   https://gov.wales/sites/default/files/publications/2021-12/workforce-partnership-council-agreement-2021.pdf

15   The IFOW definition of 'good work' can be found here: https://www.ifow.org/publications/the-ifow-good-work-charter

16   IFOW (2022) *Building a Systematic Framework of Accountability for Algorithmic Decision Making,* Annex 1 https://uploads-ssl.webflow.com/5f57d40eb1c2ef22d8a8ca7e/62349d0fc097275eec2a930c_IFOW-AIA%20Policy%20Paper%20(v8-18.03.22).pdf

17   https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html

18   https://www.government.nl/documents/reports/2022/03/31/impact-assessment-fundamental-rights-and-algorithms

19   https://www.bsigroup.com/en-GB

20   Colclough, C. (2021) *Co-Governance of Algorithmic Systems – a guide,* The Why Not Lab https://www.thewhynotlab.com/_files/ugd/aeaf23_62a52b0671c2466e999b2064c0cdb95b.pdf

21   https://20t4kl3bmt1vfknwx15oqye8-wpengine.netdna-ssl.com/wp-content/uploads/2021/12/RGB_A_partnership_Approach_to_Use_of_Technology_at_Work_Oct21.pdf

22   https://www.acas.org.uk/acas-code-of-practice-on-disclosure-of-information-to-trade-unions-for-collective-bargaining

23   https://techpolicy.press/artifice-and-intelligence

24   https://www.ifow.org/publications/the-ifow-good-work-charter

25   https://www.tuc.org.uk/sites/default/files/Technology_Managing_People_2021_Report_AW_0.pdf

26   https://community-tu.org/preparing-for-the-future/#5e7e52b3

27   https://www.gmb.org.uk/news/workplace-surveillance-affects-mental-health-one-three-workers and https://www.tuc.org.uk/news/intrusive-worker-surveillance-tech-risks-spiralling-out-control-without-stronger-regulation

28   Community and IFOW (2021) *Technology Agreements: a partnership approach to the use of technology at work* https://20t4kl3bmt1vfknwx15oqye8-wpengine.netdna-ssl.com/wp-content/uploads/2021/12/RGB_A_partnership_Approach_to_Use_of_Technology_at_Work_Oct21.pdf

29   Workplace Relations Commission (2021) *Code of Practice for Employers and Employees on the Right to Disconnect* https://www.workplacerelations.ie/en/what_you_should_know/codes_practice/code-of-practice-for-employers-and-employees-on-the-right-to-disconnect.pdf

30   https://prospect.org.uk/news/right-to-disconnect

31 Prospect (2021) *Digital Technology: a guide for union representatives*
    https://prospect.org.uk/about/digital-technology-guide-for-union-reps

32 *https://www.natlawreview.com/article/germany-s-works-constitution-act-important-changes-to-law-effective-june-2021*

33 *Legislation and Collective Bargaining in Algorithmic Management in Spain,* presentation by Ruben Ranz, UGT Spain, ETUI/KU Leuven conference April 2022.

34 *https://en.unesco.org/artificial-intelligence/ethics*

35 *https://publicservices.international/resources/digital-publication/digitalisation-br-a-union-action-guide-for-public-services-work-and-workers?id=11767&lang=en*

36 *https://lawnotes.brooklaw.edu/issue/spring-2021/the-new-laws-of-robotics*

37 Ibid.

38 This list of information has been compiled using material from UGT Spain (*Legislation and Collective Bargaining in Algorithmic Management in Spain,* presentation by Ruben Ranz, UGT Spain, ETUI/KU Leuven conference April 2022) and Community union guidance A Partnership Approach to the use of Technology at Work.

39 This list was prepared based on Frank Pasquale's presentation AItalks@ETUI on 17 May 2022, *Limiting or Refining the Digitization of Judgment*.

40 Colclough, C. (2022) *Ensuring Collective Data Rights – a guide,* The Why Not Lab
    https://publicservices.international/resources/publications/ensuring-collective-data-rights---guide?id=12601&lang=en

41 *https://en.unesco.org/artificial-intelligence/ethics*

42 *https://www.futureworkappg.org.uk/news/zownl0mx4t4n6smrk4dmzor0oz4djg*

43 Colclough, C. (2021) *Digital Rights Organiser – training material,* The Why Not Lab
    https://publicservices.international/resources/publications/digital-rights-organiser---training-material-eu-na-ca?id=11908&lang=en

44 Equity (2022) *Stop AI Stealing the Show* *https://www.equity.org.uk/getting-involved/campaigns/stop-ai-stealing-the-show*

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