



OFFICIAL - PUBLIC

CHIEF CONSTABLE'S REPORT TO NORTHERN IRELAND POLICING BOARD 2 JULY 2020

PURPOSE

The purpose of this report is to:

- 1. Provide an overview of the progress made in tackling serious and organised crime this year (pages 2-14)
- 2. Provide an overview of our approach to digitalisation (pages 15-21)

1/ TACKLING SERIOUS AND ORGANISED CRIME

Introduction

This section of the report provides an overview of the investigations conducted by Crime Operations Department from 1 January 2020. It demonstrates the work conducted by the Paramilitary Crime Task Force (PCTF), Organised Crime, Economic Crime, Criminal Investigation Division and Serious Crime Branch in demonstrating that We Care, We Listen and We Act against organised criminality and terrorism in Northern Ireland.

All of this work will contribute to the three Policing Plan outcomes of;

- We have a safe community
- We have confidence in policing
- We have engaged and supportive communities.

This report is broken down into the following thematic areas of business;

- a) Paramilitary Crime Task Force
- b) Drugs
- c) Serious Acquisitive Crime
- d) Violent Crime
- e) Financial crime
- f) Serious Crime Branch

A/ PARAMILITARY CRIME TASK FORCE (PCTF)

PCTF continues to focus its efforts towards those paramilitary organised crime groups

that are assessed to pose the most harm to communities. A synopsis of successes

against the main groups is listed below:

East Belfast UVF

During this reporting period, the PCTF has carried out a large number of search and

arrest operations targeting the organised criminality of East Belfast UVF. The most

significant of these interventions resulted in the discovery of a sophisticated cannabis

factory producing cannabis (which is estimated to have removed £600k worth of

cannabis from circulation). As a result of this intervention in May, a male was arrested

and charged with a number of offences, including being concerned in the supply of

controlled drugs.

During March, PCTF also worked jointly with local Neighbourhood Policing Teams in

East Belfast to target and disrupt the activities of East Belfast UVF. In these operations

a number of vehicles were stopped and searched, resulting in significant seizures. This

included cocaine with an estimated street value of £1,800 and suspected criminal cash

totalling approximately £20,000. Three males were arrested and charged with various

drugs related offences.

Other significant results against East Belfast UVF in this period have included the arrest

of a male and the seizure of cannabis with an estimated street value of £40,000. A male

was also arrested and charged with being concerned in the supply of controlled drugs,

following the discovery of a cocaine press and 2kgs of suspected 'cutting agent'.

INLA

INLA organised criminality was also disrupted during this period, with several searches

being conducted in West Belfast, Derry/Londonderry and Strabane District. A search of

a property in West Belfast resulted in the recovery of a quantity of Class B and C

controlled drugs along with £3,500 of suspected criminal cash. A male was charged with

possession of criminal property and drugs offences.

3

A search in South Belfast resulted in the seizure of over £5k cash, suspected to be linked to INLA criminality. Searches in Derry and Strabane District also resulted in the seizure of two high value motor vehicles.

West Belfast UDA

In February, the criminal activity of West Belfast UDA was subject to a day of action by the PCTF with eight searches being conducted at properties in Belfast. During these searches, a male was arrested on suspicion of breaching a Terrorism Prevention Order and drug offences. This resulted in his Article 17 licence being revoked, meaning that he was returned to prison. Drug offences were detected across a number of the addresses searched, along with suspected benefit frauds.

Action against West Belfast UDA also took place in the Newtownards area in February. This resulted in the arrest and charge of a male with various drugs offences, including possession of a Class A controlled drug and possession with intent to supply. At one search, a luxury motor vehicle and a further £8,000 of suspected criminal cash were seized. A male has been arrested and enquiries are ongoing. Other searches in the Newtownards area resulted in the seizure of class B controlled drugs with an estimated street value of £20,000 and £3,000 of suspected criminal cash. A male was arrested and charged with several drugs related offences.

South East Antrim UDA

South East Antrim UDA were also subject to operational activity during this reporting period. Most significantly, an arrest was made following a reported blackmail attempt (extortion), concerning an alleged "debt" to these paramilitaries.

A number of searches were also conducted under the Misuse of Drugs Act. These resulted in the arrest and charging of two males and one female for various drugs related offences, possession of a prohibited weapon and possession of criminal property.

Further operational activity in March, led to the arrest and charge of two males following a house search in Carrickfergus. These males were arrested for drug offences, including possession with intent to supply and possession of ammunition in suspicious circumstances.

The table below shows the ongoing work of the PCTF over the past two financial years.

	2019-2020	2020-2021	Rolling Total 2019 – to date	Rolling Total Since Inception (2016)
Arrests (PSNI, HMRC & NCA)	68	6	74	280
Searches	130	21	151	594
Charge & Reports	72	4	76	224
Drugs Street Value (£)	£453,794.00	£666,130.00	£1,119,924.00	£1,644,954.00
Weapons	9	2	11	174
Vehicles	8	3	11	46
Cash Seized/Detained	£143,006.81	£16,802.00	£159,808.81	£420,058.81
Cash Forfeited	£34,450.00	£0.00	£34,450.00	£614,343.00
Value of Freezing Orders Obtained	£2,000,000.00	£0.00	£2,000,000.00	£2,150,000.00
Value of Recovery Orders Granted	£210,000.00	£0.00	£210,000.00	£465,000.00
Value of Tax Assessments Issued	£238,184.04	£0.00	£238,184.04	£238,184.04
Revenue Loss Prevented (HMRC)	£1,043,332.00	£95,242.00	£1,138,574.00	£4,550,142.00

B/ Drugs (For ease of reading, the PCTF drugs seizures are not included in the following summary)

The Police Service of Northern Ireland works jointly with a wide range of partners to effectively tackle the harm caused by drugs supply and misuse. This is achieved through collaborative working within our organisation and with governmental and third sector partners (such as Department of Justice, Health, Education, Communities). We lead on enforcement through membership of the Organised Crime Task Force, Cross Border Joint Agency Task Force and the Tackling Paramilitaries Programme Board. A tiered approach is adopted to tackle importation, supply and distribution.

In the year 2019/20, we made 3819 drug related arrests, which represents an increase of 501 (15.1%) compared to the previous year.

This year, approximately £2m of controlled drugs and over £200,000 cash were seized during one investigation into an international organised crime group. The money, which

was seized as evidence of criminality, will also be subject to a Proceeds of Crime Application (POCA), so that it will be forfeited.

In March, our Detectives jointly participated in an Interpol operation, designed to tackle the illegal supply of prescription medicines. During this operation, 100k illicit tablets were recovered, in partnership with United Kingdom Border Force and the Medicines Regulatory Group. In addition to this, two further operations have been conducted into the illicit supply of prescription medicines. An estimated £140,000 of tablets and £2,000 cash were recovered during transit within the postal service. This resulted in three significant arrests of organised crime gang members.

It is considered essential for us to continue to work with international law enforcement partners to disrupt the importation and distribution controlled drugs into Northern Ireland. In May, we provided assistance to the National Crime Agency (NCA), which led to approximately £3m of cocaine being intercepted in Dover and in June, a further £10m of herbal cannabis was intercepted in Templepatrick.

The most recent major success, in May of this year, resulted in the seizure of an estimated £60k of cocaine, which was being imported into Northern Ireland for distribution. This excellent detection led to three arrests, all of whom were remanded in custody.

C/ Serious Acquisitive Crime

Serious Acquisitive Crime remains a priority for Crime Operation Department Detectives who work tirelessly to apprehend criminal gangs and bring them before the courts. A recent example of success has been the charging of four persons with conspiracy to steal. This related to nine different ATM attacks in the South Antrim area between 27 October 2018 and 6 December 2019.

Through the partnership of the Joint Agency Task Force (JATF), we also arrested two members of a criminal gang in County Armagh who had stolen ATMs in Dundalk. The

ATMs were subsequently recovered in Northern Ireland, containing €350k and the suspects have been charged and were remanded in custody on 6 April 2020.

Mobile Organised Crime Groupings (MOCG) continue to be responsible for numerous

burglaries and travel throughout Northern Ireland perpetrating crimes on what are

usually vulnerable victims.

Over the past year 124 burglaries are believed to have been committed by a single

Belfast-based MOCG. The investigation of this MOCG has been a particular focus of

Criminal Investigation Branch and has led to four house searches, two arrests and one

person being charged with 12 of the burglaries.

Another MOCG were responsible for targeting vulnerable people in rural locations were

they committed burglaries, stealing mostly jewellery and cash. Detectives coordinated an

investigation working alongside local police in both North and South areas, and were

able to identify, arrest and charge the three key members of this MOCG. At present they

remain remanded in custody for these various burglaries committed countrywide.

A relatively new crime type is an investigation into an Organised Crime Group (OCG)

based in Northern Ireland who have been involved in keyless car thefts. In the past

twelve months, there have been 46 high value vehicles stolen in Northern Ireland using

this particular method. In May 2020, the PSNI responded to suspicious activity at an

address in Gilford, County Down, which led to three suspects being arrested for going

equipped to steal such vehicles. Follow-up searches in North Armagh led to a further

two arrests and the recovery of parts to 12 stolen cars, valued at approximately £500k

and £20k cash.

D/ Violent Crime

From 1 January 2020, 86 distinct investigations have been commenced into incidents

that have ranged from Arson with Intent to Endanger Life to serious assaults and

Attempted Murder. Many of these incidents are linked to organised criminals, disputes

over territory or between gangs.

7

Where possible, investigators bring offenders before the courts at the earliest opportunity in order to protect communities. A snapshot of the types of violent crime which have been witnessed from January 2020 and the progress we have made is outlined below:

- Suspect threw accelerant over the victim and attempted to set them on fire –
 subsequently arrested and charged with Attempted Murder.
- Suspect stamped on the victim's head charged with Attempted Murder.
- Suspect stabbed his victim five times with a bayonet –charged with Attempted Murder.
- Suspects attacked victim with a hammer whilst armed with a handgun subsequently arrested and charged with Attempted Murder.
- Suspect stabbed his victim in the neck with a ripped drinks can arrested and charged with Grievous Bodily Harm with Intent.
- Suspect stabbed victim outside a shop arrested and subsequently charged with Grievous Bodily Harm with Intent despite the non-cooperation from the victim due to the presence of CCTV.
- Suspect who was on bail for Attempted Murder in early April, went on to stab a
 further victim at least eight times, one of which was in the neck close to severing a
 main artery. Suspect charged with Attempted Murder.

Crime Operation Department have also been providing substantial support to Essex Police, in their investigation into the tragic circumstances of the death of 39 migrants in October 2019. Local Detectives have assisted the Essex based enquiry team by identifying and locating members of an OCG, conducting numerous searches and seizing material vital to the investigation.

There have been seven violent incidents related to paramilitaries in the Causeway Coast and Glens area since 1 January, which represents a significant upsurge. These have ranged from shots fired at houses to Paramilitary Style Attacks on individuals. As a result of enquiries a person was arrested in connection with some of these incidents by virtue of Section 41 Terrorism Act and investigations are ongoing into these incidents.

E/ Financial Crime

Financial crime is an area which has continued to see a significant rise and Crime

Operations Department have achieved successes in detecting and restraining the assets
of criminals involved. The following case studies illustrate the nature of this work:

Case Study 1

This investigation identified 50 companies and over 140 bank accounts in which £215m had been deposited and transferred out of the United Kingdom through foreign exchange companies. In January, 15 properties were searched and seven people arrested for Money Laundering offences. This is the largest Money Laundering search and arrest operation ever undertaken in Northern Ireland.

Case Study 2

In May 2020, Police were made aware of a male attending a financial institution where he purported to be another person and made a false loan application of £25k under the special provisions made available due to COVID-19. Due to observations of officials, the suspect was arrested the following day for Fraud by False Representation and was later charged. The offender is the main suspect in a separate multi-million pound fraud investigation against financial institutions and was on police bail at the time of the incident.

In addition to the successes of these case studies in 2020, we have also:

Confiscated £154,000

(Confiscation refers to when persons are convicted of criminal offences and they have financially benefitted from those offences. A figure is placed on their criminal benefit by the courts)

Restrained £18,836

(Restrain – is where a suspect is found to hold valuable assets which are ordered to be held by the High Court, primarily in order to ensure they are available for later Confiscation)

Seized £67,789.66 (16 seizures under Proceeds of Crime Act (POCA))

(Seize – refers to items physically seized by Police at the time of searches as these items are believed to be criminal property – ie obtained through the proceeds of crime.)

F/ Serious Crime Branch

Serious Crime Branch is responsible for major crime and terrorism investigations and has also seen significant successes in 2020. Some highlights of their work are listed as follows:

Explosion - Coalisland - 26 March 1997

In February 2020, Paul Campbell was sentenced to 7½ years imprisonment for unlawfully and maliciously causing an explosion of a nature likely to endanger life. This related to an explosion on 26 March 1997 in Coalisland. He will also be subject to counter-terrorism provisions for 15 years.

Murder – John Stephen Knocker – 31 May 1998

In May 2020, Francis Lanigan was found guilty of the murder of John Stephen Knocker and sentenced to life imprisonment. A tariff hearing will be set at a later date.

Terrorism Offences, August 2014

In January 2020, seven men pleaded guilty to a range of terrorism offences following an operation which centred on a house in Newry in August 2014. Patrick Blair, Liam Hannaway, John Sheehy, Colin Winters, Seamus Morgan, Kevin Heaney and Terence Marks admitted to a number of charges which included belonging to a proscribed organisation, providing weapons and explosives training, conspiring to possess explosives, firearms and ammunition with intent to endanger life.

Manslaughter – Christopher Meli – 12 December 2015

In January 2020, eight defendants were sentenced in relation to the manslaughter of Christopher Meli. Lee Smyth was sentenced to 9 years for manslaughter and Caolan Laverty was sentenced to 5 years. The other six defendants received a combination of community service and probation orders.

Modern Slavery & Human Trafficking, July 2017

In January 2020, Marian Ilie was sentenced to 12 months imprisonment, suspended for two years for Human Trafficking and Money Laundering in July 2017. This was as a proactive investigation into suspected human trafficking for sexual exploitation and was conducted under Joint Investigation Team protocols with Police Scotland and Romanian Police.

Murder - Stefan Zait - 24 May 2018

In February 2020, Jason Carr was sentenced to life imprisonment and will serve a minimum of 11 years for the murder of Stefan Zait.

Manslaughter - Robert Molloy-Jones - 28 June 2018

In March 2020, Jordan Snoddy was sentenced to 5 years for the manslaughter of Robert Molloy-Jones.

Manslaughter - Pauline Kilkenny - 13 November 2018

In February 2020, Joseph Dolan was sentenced to a minimum of 10 years for the manslaughter of Pauline Kilkenny.

Murder of Lyra McKee – 18 April 2019

One person has been charged with the murder of Lyra McKee and is currently on remand. The weapon used to murder Lyra McKee was also recovered during a planned search operation over 5–6 June 2020 in the Ballymagroarty area of Derry/Londonderry.

International Cyber Crime Operation, 2020

On 15 January 2020, our Cyber Crime Centre along with NCA and other international law enforcement partners were involved in an operation which resulted in a website being taken down. The website provided the personal details of more than 12 billion people and cyber criminals were able to access this for as little as \$2 per day. A 22 year old suspect was arrested in Co Tyrone and was later released on bail. The investigation is ongoing.

Murder of Nathan Gibson, 16 January 2020

One person has been charged with the murder of Nathan Gibson and a number of other offences. The investigation is ongoing.

Recovery of Improvised Explosive Device – 4 February 2020

On 31 January 2020 a call was received which indicated that an explosive device had been placed on a lorry trailer which was at the docks and was due to explode. An immediate investigation did not uncover anything suspicious at the docks. Follow-up enquiries located an improvised explosive device under a trailer in the Lurgan area on 4 February 2020. This investigation is ongoing.

Murder of Inayat Shah, 21 March 2020

One person has been charged with the murder of Inayat Shah and a number of other offences and is currently on remand. The investigation is ongoing.

Cyber Vulnerability Notification – 24 March 2020

As part of the NPCC Cyber Protect network, our Cyber Crime Centre were provided with a priority notification concerning an identified vulnerability in software used by a local company within the Pharmaceutical sector. Detectives were able to quickly approach this company and provide guidance which prevented a potential network intrusion.

Murder of Elizabeth Dobbin - 30 March 2020

One person has been charged with the murder of Elizabeth Dobbin and is currently on remand. The investigation is ongoing.

Murder of John McDonagh – 11 April 2020

One person has been charged with the murder of John McDonagh and other offences and is currently on remand. Two other persons have been charged with ancillary offences. The investigation is ongoing.

Covid-19 Cyber Support – April 2020 to date

Provision of online support to Northern Ireland organisations through the local management of national cyber security social media plans and the delivery of online

Cyber Information Sheets to 35 membership bodies and local IT teams.

Schools Cyber Training Package – April 2020

A virtual online package for use as an additional resource in schools has been

developed jointly by PSNI's Cyber Prevent Officer, NI Cyber Security Centre, Education

Authority and C2K after identifying a need for further cyber awareness for young people.

A trial was run between April and June by six volunteering schools and subject to the

results of the consultation period, it is intended to release this package to local teachers

and in the longer term to local youth organisations.

Murder of Emma McParland - 22 April 2020

One person has been charged with the murder of Emma McParland and is currently on

remand. The investigation is ongoing.

Murder of Maris Ludborzs - 23 May 2020

One person has been charged with the murder of Maris Ludborzs and is currently on

remand. The investigation is ongoing.

Recovery of Partially Constructed Pipe Bomb / Component Parts – 23 May 2020

One person was charged with possession of Explosives in suspicious circumstances

based on forensic evidence recovered from partially constructed pipe bombs and

component parts which were located during a police search in the Dunmurry area in

September 2019. The investigation is ongoing.

Murder of Darren McNally – 8 June 2020

One person has been charged with the murder of Darren McNally and is currently on

remand. The investigation is ongoing.

13

All Ireland Cyber Security Webinar – 11 June 2020

Crime Operations Department Detectives presented to a cyber security webinar involving approximately 120 members of the Chartered Institute of Management Accountants (Ireland) in conjunction with National Cyber Security Centre (Ireland) and NI Cyber Security Centre. This was considered to be a valuable event to assist with collaborative working regarding the response to this rising crime type.

2/ DIGITILISATION

The purpose of this section of the report is to outline how we have exploited technology to improve service provision and to outline our digital ambitions for the coming years under the banner 'Digital PSNI'.

We have submitted three strategic outline cases (SOCs) to the Board and the Department of Justice outlining the rationale for investment and significant transformational change over the coming years: "Digital PSNI" is one of the three and seeks to attain the overarching goals outlined in the our Service Modernisation Plan, 'Horizon 2025' (see the Infographic at the end of this section). Creating a Digital PSNI is critical to our modernisation plans and will make our Police Service more visible, accessible and community focussed. I want a Digital Police Service that takes advantage of rapid changes in mobile technology, underscores how the Service interacts with the public and also how we use and deploy our officers and staff. The key themes are identified in our Digital Strategy

Our refreshed Digital Strategy 2020 & Beyond aims to consolidate the direction of travel for our digital ambitions across the organisation and prioritises investments in technology aligned to our corporate priorities. It addresses maintaining existing ICT services upon which policing operations are dependent as well as providing powerful, new digital capabilities which mean:

- Police Officers and Police Staff will have the digital tools and services to support them in doing their job;
- Our workforce will be able to conduct most of their tasks in the field and have access to the right information at the right time;
- Automation will be common place and used effectively to release capacity for staff and officers to focus on higher value work;
- Effective working with partners will allow secure exchange of data and digital evidence across agency boundaries enabling new ways of working and improving public outcomes;

• A member of the public can use their everyday devices and applications to easily engage with the police;

Remote/Agile Working



In February 2020, we had already commenced the early stages of uplifting our virtual infrastructure to enable remote working. Our response to the Covid-19 Pandemic prompted a significant acceleration of this. In a little over three weeks our Information and Communication Services (ICS) colleagues were able to distribute 1,200 remote working laptops to end users. This has enabled our thinking about Agile Working to be accelerated. Colleagues were provided with innovative, flexible technology to perform their roles remotely to meet organisational priorities, maintain essential services and protect those within the organisation most vulnerable to infection. Facilitating communications between colleagues working remotely was another challenge to overcome.

Internal webinars were hosted on our Intranet to facilitate remote briefings and leadership training. The rollout continues at pace with over 1,500 devices now in the hands of Officers and Staff. The next step for us will be to capture the learning from this period in order to develop effective agile and remote working practices for the longer term.

Occupational Health and Welfare assessments were performed remotely through the provision of both teleconferencing and video conferencing where all parties were happy to do so.

Testing of ruggedised tablets by Neighbourhood Officers in Tennant Street commenced in June. Neighbourhood Teams based in Fermanagh and Derry City and Strabane will commence testing ruggedised laptops from next week.

Online Crime Reporting

Our Covid-19 response included the disaggregation of our Call Management Centres (CMC) for business continuity purposes by moving from three main centres to seven locations. In order to help manage the allocation of calls being made to our non-emergency number, 101, ICS introduced the ability for members of the public to report Citizen Covid-19 breaches via an online form. Automatic messaging on our 101 system deflected between 70-79% of such callers onto the website without re-appearing in our 101 call queues. Since its introduction on 13 April 2020, over 5,400 submissions have been made to date. On 27 April 2020, robotic process automation (Bots) was implemented to assist with the handling of the volumes of breaches being reported. Bots have since processed over 3,200 submissions. This technology and functionality has been enhanced further to allow all online incident reporting to be integrated with our ControlWorks system. Over 1,600 incidents have been submitted online, assessed and categorised for call dispatchers to assign to call signs as necessary, without the need for human intervention. Our survey to date tells us that 77% of users rated the online crime and incident report system as good or very good.

Automation



We recently embarked on a programme to build on the successes derived from our transformation of online firearms applications. Through automating high volume, low complexity tasks, we aim to deliver significant business change enabled by technology. We recognise that Automation offers a range of benefits including quality improvement, increased capacity, and decreased process times.

A summary of the progress to date is as follows:

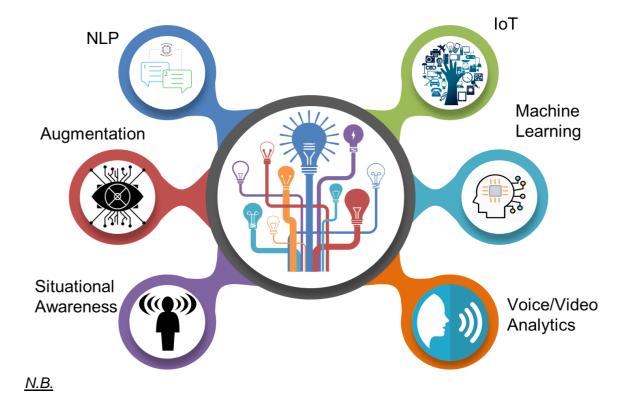
Business Unit	Business Problems	Business Benefits
Automation Within Firearms Licensing	Moved from a paper based to a fully online application process. Process bottlenecks were leading to queues for service and external pressure. Process risks were leading to operational and public safety risks.	9.4 hours back per employee per week. 36% capacity uplift equating to 6.2 Full Time Equivalent posts Minimum turnaround time reduced from 4 weeks to 2 days. Newly enabled process steps reducing operational and
Automation within intelligence	Officers submit 104,000 intelligence sightings annually. Administrative staff manually action each of these in our computerized database. Staff cannot quickly identify priority or complex intelligence. Submission quality and underlying data quality lacks consistency.	public safety risks. 45% of mobile sightings processed end-to-end without human input. A triage system has been introduced by flagging complex sightings for human review. Capacity creation of 6.8 Full Time Equivalent posts. Backlog reduced - decreasing the time between intelligence submission and intelligence availability.
Automation within Call Management Centres	An online reporting form was introduced to allow members of the public to report COVID related incidents. Staff were required to manually record each submission as a Record of Contact (RoC). This created a large and fluctuating demand on the Contact Management Centres	Solution was built, tested and deployed in one week. COVID reports submitted are raised as a RoC without human input. Average processing time reduced by 74%. Capacity saving of ~6.95 Full Time Equivalent posts.

We are now seeking to scale robotics further across the organisation. This will require us to identify and prioritise similar types of end-to-end opportunities as those outlined above and set acceptable risk thresholds to optimise our business processes. The utilisation and exploitation of robotics can deliver greater efficiencies for the organisation

and better outcomes for members of the public and colleagues alike.

Whilst Robotic Process Automation is at the beginning of the Artificial Intelligence spectrum, we have aspirations to move into other areas such as Natural Language Processing and Machine Learning where we identify opportunities to do so.

This will present both skills and ethical challenges for the organisation. In order to ensure efficient planning and consider the implications of using these technologies, we have recently established a Programme Board to govern delivery of these new projects.



NLP – Natural Language Processing – such as scanning letters or intelligence submissions for key words reducing the need for human review

IoT – Internet of Things - connecting all our devices and equipment to automatically perform tasks based on location, addresses, Officer in Charge etc.

Remote Communications

Our technology enabled response to the Covid-19 pandemic required innovative solutions. In our Custody Suites, as social distancing measures were introduced, ICS introduced iPads and Wi-Fi access to facilitate remote hearings via secure links with the Northern Ireland Court Service on a regional basis. This was subsequently expanded to facilitate remote communication between a Detained Person and their Solicitor.

We have recently commenced facilitating remote victim and witness statements via our secure data sharing platform. This platform has also facilitated sharing of digital evidence with our partners in the Public Prosecution Service to enable faster prosecutorial decisions to be made.

Our efforts in this field should realise savings for the Service that can be reinvested into the key priorities such as neighbourhood policing.

Ends