

Annex

Request

Please provide:

1) All internal email correspondence since April regarding the two-month pilot of blockchain technology in a cattle slaughterhouse

Response

All documents in scope of your request are provided in the attachment to this letter.

Where some of information contained within in a document was found to be out of scope of the request it has been redacted and the document noted accordingly.

Also, where an email included attachments in scope of your request but the email itself contained no additional information, we have not included the email.

Some of the information in scope of your request has been redacted under Section 31(1)(a) (Prevention and detection of crime), Section 40 (Personal information) and Section 43 (Commercial interests) of the Act. Further details about our use of these exemptions are provided in Annex B.

Annex B

Section 31 (Law enforcement)

Information relating to Teleconferencing details, such as direct phone numbers and passcodes, have been withheld under section 31 (1) (a) of the Act (the prevention or detection of crime).

Section 31 (1)(a) states that:

1. Information which is not exempt information by virtue of Section 30 is exempt information if its disclosure under the Act would, or would be likely to prejudice-

(a) the prevention or detection of crime.

The exemption under section 31(1)(a) is qualified and is subject to the balance of the public interest. This means that a public interest test must be carried out to determine whether the public interest in maintaining the exemption outweighs the public interest in disclosing the information.

In favour of release, we acknowledge that there is a general public interest in openness and transparency, particularly with regards to the disclosure of information relating to our IT systems. However, in favour of not providing the information, we consider that disclosure of this type of information could allow a malicious party to determine the security state of the FSA, thus proving useful to those wishing to harm FSA systems. Disclosing information regarding the FSA's teleconferencing facilities leaves the FSA's IT systems vulnerable to attack. Attacks on the FSA's IT systems could of themselves constitute a crime or create a vulnerability to criminal activity.

We therefore consider that, in all the circumstances of this case, the balance of the public interest favours withholding this information.

Section 40 (Personal Information)

Some information has been redacted and is being withheld under Section 40(2) & (3) of the Freedom of Information Act which relates to the personal information of an individual such as details about social interactions. In addition, the names and direct contact details of FSA employees below civil service grade 7 and third parties have been withheld.

We consider such information falls within scope of your request and, if disclosed would contravene the data protection principles of the Data Protection Act 1998, particularly that to process the data in this way (i.e. by disclosure to the public) would not be fair in all the circumstances.

Section 43 (commercial interests)

Information relating to kill numbers, ear tag numbers and previous owner references have been withheld under section 43 (2) of the Act (Commercial interests).

The wording of the Act:

Section 43 (2) states that:

(2) Information is exempt information if its disclosure under this Act would, or would be likely to, prejudice the commercial interests of any person (including the public authority holding it).

The exemption under section 43 is a qualified exemption and is subject to the balance of the public interest to consider whether the balance of public interest in disclosing the information outweighs that in not disclosing it.

In favour of disclosure is the public interest in openness and transparency particularly with regard to the provision of safe meat and animal welfare. However, there is also a need to protect the legitimate commercial interests of food producers.

If food producers believe that information about the day to day running of their plant will be disclosed, they might be reluctant in future to co-operate and provide the Agency with all the information it requires to carry out its statutory functions. This could be damaging to the Agency's objective of protecting public health in relation to food.

It is not in the public interest to disclose information that would be likely to be used by competitors and weaken a company's position, in an already competitive market. We believe, therefore, that the balance of the public interest favours withholding the information.

[6] RE: The Blockchain piece

From: Sian Thomas
Sent: 03 July 2018 16:01
To: Steven Pollock <Steven.Pollock@food.gov.uk>; Julie Pierce <Julie.Pierce@food.gov.uk>
Subject: RE: The Blockchain piece

Yes – I am sure there is and it would be good to have a friendly go to in the space!

Thanks Steven,

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Steven Pollock
Sent: 03 July 2018 15:55
To: Julie Pierce <Julie.Pierce@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: The Blockchain piece

Julie, Sian,

I think Caroline's sent you both a link to the coverage of the Blockchain pilot.

Just browsing through it and this one caught my eye – see the heading for the second section of the article *"Food Standards Agency: hotbed if IT innovation?"*. I don't know if either of you know the journalist or he's spoken to someone before but I'd quite like us to build an ongoing relationship with some of these journos and titles, I'm sure there's a pipeline of interesting stuff we might share with them, no? Maybe get some of them in at some point for a background briefing on what we're up to in this space?

<https://www.cbronline.com/news/fsa-blockchain>

Steven

Steven Pollock

Director of Communications

Food Standards Agency

Steven.pollock@food.gov.uk

020 7276 8848

07773 644521

11 RE - Blockchain infographic

From: Sian Thomas

Sent: 03 July 2018 12:17

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>; [Section 40]

Cc: [Section 40]

Subject: RE: Blockchain infographic

Yes. All good. Typo in the bottom text on A1 – missing space. But otherwise all good. And title is fine.

Thanks Caroline

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H

9EX | 02072768761 | 07770596749 | @drsiant

From: Caroline Kitson
Sent: 03 July 2018 12:14
To: Sian Thomas <Sian.Thomas@food.gov.uk>; [Section 40]
Cc: [Section 40]
Subject: FW: Blockchain infographic

Hi Sian and [Section 40]

With thanks to [Section 40], the text has been added to the infographic – can you confirm that A1 has the text in the correct position? I think it needs a title suggest – ‘FSA Blockchain pilot in slaughterhouse’

[Section 40] - apologies for the delay have had major IT problems for the last hour.

Thanks all

Caroline

From: [Section 40]
Sent: 03 July 2018 10:53
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>
Subject: Blockchain infographic

Hi Caroline, please send through any amends by midday and we'll incorporate.

Thanks

[Section 40]

From: [Section 40]
Sent: 03 July 2018 10:49
To: [Section 40]
Subject: FW:

[Section 40] | Food Standards Agency in NI

[Section 40] 10a-c Clarendon Road, Belfast BT1 3BG

14 Blockchain news story

From: Sian Thomas
Sent: 02 July 2018 13:25
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>
Cc: Julie Pierce <Julie.Pierce@food.gov.uk>; [Section 40]
Subject: FW: Blockchain news story

Caroline,

[Section 40] thought this would be more useful (and it does make sense!)

- FROM BIRTH, INDIVIDUAL ANIMAL MOVES TO DIFFERENT FARMS UNTIL IT IS TRANSPORTED TO THE SLAUGHTERHOUSE
- ONCE THE CARCASS IS PROCESSED, FSA STAFF RECORD INSPECTION FINDINGS ON THE ELECTRONIC SCREENS.
- FBO UPLOADS THE DATA COLLECTED BY FSA STAFF TO BE VERIFIED BY THE OFFICIAL VET
- AFTER VETS APPROVAL, INSPECTION DATA IS RECORDED ON THE BLOCKCHAIN AND INDIVIDUAL REPORTS ARE GENERATED FOR ALL PARTICIPANTS: FARMERS, FBO AND FSA

Happy for you to decide!

Thanks

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Section 40]
Sent: 02 July 2018 13:20
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: RE: Blockchain news story

SIMPLE STEP BY STEP EXPLANATION FOR YOUR REVIEW.

- SINCE BIRTH, INDIVIDUAL ANIMAL MOVES FROM DIFFERENT FARMS UNTIL IS TRANSPORTED TO THE SLAUGHTERHOUSE
- ONCE THE CARCASS IS PROCESSED, FSA STAFF RECORD INSPECTION FINDINGS ON THE ELECTRONIC SCREENS.
- USING THE NEW INTERFACE, FBO UPLOADS THE DATA, WAITING FOR OV'S VERIFICATION
- AFTER OV'S APPROVAL, INSPECTION DATA IS RECORDED ON THE BLOCKCHAIN SYSTEM AND INDIVIDUAL REPORTS ARE GENERATED FOR ALL PARTICIPANTS: FARMERS, FBO AND FSA

[Section 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Section 40] **M:** [Section 40] **E:** [Section 40]

From: Sian Thomas

Sent: 02 July 2018 13:11

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>

Cc: [Section 40]; Julie Pierce <Julie.Pierce@food.gov.uk>

Subject: RE: Blockchain news story

Hi Caroline,

Suggest something like :

The infographic shows the approach used in our pilot blockchain and how this differs from conventional reporting. Typically, the Food Business Operator provides information about conditions at slaughter to the farmer that sent the animal to the abattoir. The blockchain approach enables all farmers who owned the animal to see the conditions at slaughter.

Happy for additional comments if you have any.

Thanks

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Caroline Kitson

Sent: 02 July 2018 12:55

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Cc: [Section 40]; Julie Pierce <Julie.Pierce@food.gov.uk>

Subject: RE: Blockchain news story

Hi Sian

The blockchain news story has now been published:

<https://www.food.gov.uk/news-alerts/news/fsa-trials-first-use-of-blockchain>

It has been sent to those who have registered to receive news and Science news from us. Is there merit in also sending the link to [Sect 40] at BBFA?

Finally, any update on the infographic with explanatory text?

Suggest the following for social messaging with the infographic:

We've successfully completed a pilot using blockchain technology in a cattle slaughterhouse. It's the first time blockchain has been used as a regulatory tool to ensure compliance in the food sector. More information at: weblink.

Thanks

Caroline

From: Sian Thomas
Sent: 29 June 2018 10:47
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>
Cc: [Section 40]>
Subject: RE: Blockchain infographic

Yes – can I do on the train later. [Out of scope]

Thanks

S

Head of Information Management, Food Standards Agency
Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Caroline Kitson
Sent: 29 June 2018 10:46
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Cc: [Section 40]>
Subject: RE: Blockchain infographic

Hi both

Thanks – think there is probably merit in adding some explanatory text to this to assist understanding.

Is this possible?

Confirm Monday publication/social etc

FOI 2250 -Information

Regards

Caroline

From: Sian Thomas
Sent: 29 June 2018 10:37
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>
Subject: FW: Blockchain infographic

Here is the infographic – [Section 40] has re-done it so that it is ours (not IBMs).

We have checked image ownership.

Thanks

Sian

Head of Information Management, Food Standards Agency
Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Section 40]
Sent: 29 June 2018 10:35
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: RE: Blockchain infographic

Hi Sian,

Here it goes FSA's one. The other belongs to IBM.

Regards,

[Section 40]

FOI 2250 -Information

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Section 40] **M:** [Section 40] **E:** [Section 40]

From: Sian Thomas

Sent: 28 June 2018 16:46

To: [Section 40]

Subject: FW: Blockchain infographic

Said you were copied and might help – please do if you can. Just booking my hotel...

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Caroline Kitson

Sent: 28 June 2018 16:44

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: Blockchain infographic

Hi Sian

Do you hold the following infographic? I think it might have been created by MMD Comms colleagues, but can't find in any of our files etc.

Wanted to look at the original to possibly use for social media. Also have to delay publishing Blockchain news story until Monday as there may be another that has to take a priority.

Thanks

Caroline

Cynaliadwyedd - Ystyriwch cyn argraffu/Sustainability - Think before you print

16R RE Blockchain infographic

From: [Sect 40]

Sent: 03 July 2018 13:18

To: Sian Thomas <Sian.Thomas@food.gov.uk>; Caroline Kitson <Caroline.Kitson@food.gov.uk>; [Sect 40]>

Subject: RE: Blockchain infographic

Updated infographic attached for use as required.

Thanks,

[Sect 40]

From: [Sect 40]

Sent: 03 July 2018 12:42

To: Sian Thomas <Sian.Thomas@food.gov.uk>; Caroline Kitson <Caroline.Kitson@food.gov.uk>; [Sect 40]

Subject: RE: Blockchain infographic

Ah yes, sorry Sian we'll amend and send back shortly.

[Sect 40]

From: Sian Thomas

Sent: 03 July 2018 12:41

To: [Sect 40]>; Caroline Kitson <Caroline.Kitson@food.gov.uk>; [Sect 40]

Subject: RE: Blockchain infographic

I am sure there must be, but why the random capital letters? Otherwise, happy once there is a title too.

Thanks

Sian

FOI 2250 -Information

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]

Sent: 03 July 2018 12:37

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>; Sian Thomas
<Sian.Thomas@food.gov.uk>; [Sect 40]

Subject: RE: Blockchain infographic

Thanks all, please see final version attached.

[Sect 40]

From: Caroline Kitson

Sent: 03 July 2018 12:14

To: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]

Cc: [Sect 40]>

Subject: FW: Blockchain infographic

Hi Sian and [Sect 40] –

With thanks to [Sect 40], the text has been added to the infographic – can you confirm that A1 has the text in the correct position? I think it needs a title suggest – ‘FSA Blockchain pilot in slaughterhouse’

[Sect 40]- apologies for the delay have had major IT problems for the last hour.

Thanks all

Caroline

From: [Sect 40]

Sent: 03 July 2018 10:53

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>

Subject: Blockchain infographic

Hi Caroline, please send through any amends by midday and we'll incorporate.

Thanks

[Sect 40]

From: [Sect 40]

Sent: 03 July 2018 10:49

To: [Sect 40]>

Subject: FW:

[Sect 40] | Communications [Sect 40] | Food Standards Agency in NI

[Sect 40] | [Sect 40]

10a-c Clarendon Road, Belfast BT1 3BG

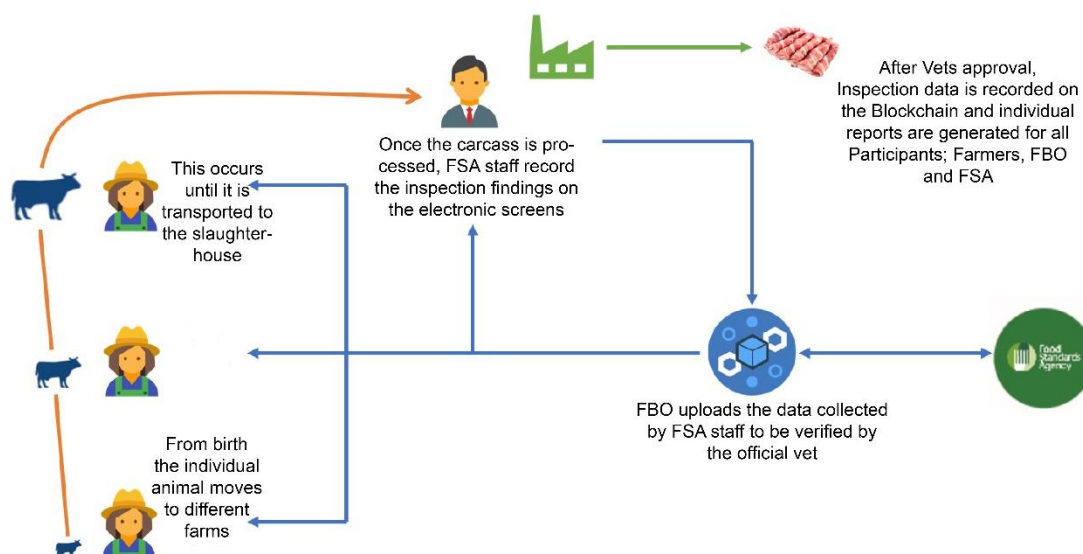
From: [Sect 40]

Sent: 03 July 2018 10:48

To: [Sect 40]>

Subject:

FSA Blockchain Pilot In Slaughterhouse



17R RE Blockchain infographic (1)

From: [Sect 40]

Sent: 03 July 2018 12:44

To: [Sect 40] >; Caroline Kitson <Caroline.Kitson@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: Blockchain infographic

Just an alternative version.

[Sect 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: [Sect 40]

Sent: 03 July 2018 12:37

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]

Subject: RE: Blockchain infographic

Thanks all, please see final version attached.

[Sect 40]

From: Caroline Kitson

Sent: 03 July 2018 12:14

To: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40];

Cc: [Sect 40]

Subject: FW: Blockchain infographic

Hi Sian and [Sect 40] –

With thanks to [Sect 40], the text has been added to the infographic – can you confirm that A1 has the text in the correct position? I think it needs a title suggest – ‘FSA Blockchain pilot in slaughterhouse’

[Sect 40] - apologies for the delay have had major IT problems for the last hour.

Thanks all

Caroline

From: [Sect 40]
Sent: 03 July 2018 10:53
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>
Subject: Blockchain infographic

Hi Caroline, please send through any amends by midday and we'll incorporate.

Thanks

[Sect 40]

From: [Sect 40]
Sent: 03 July 2018 10:49
To: [Sect 40] **Subject:** FW:

[Sect 40] | Communications [Sect 40] | Food Standards Agency in NI

[Sect 40] | [Sect 40]

10a-c Clarendon Road, Belfast BT1 3BG

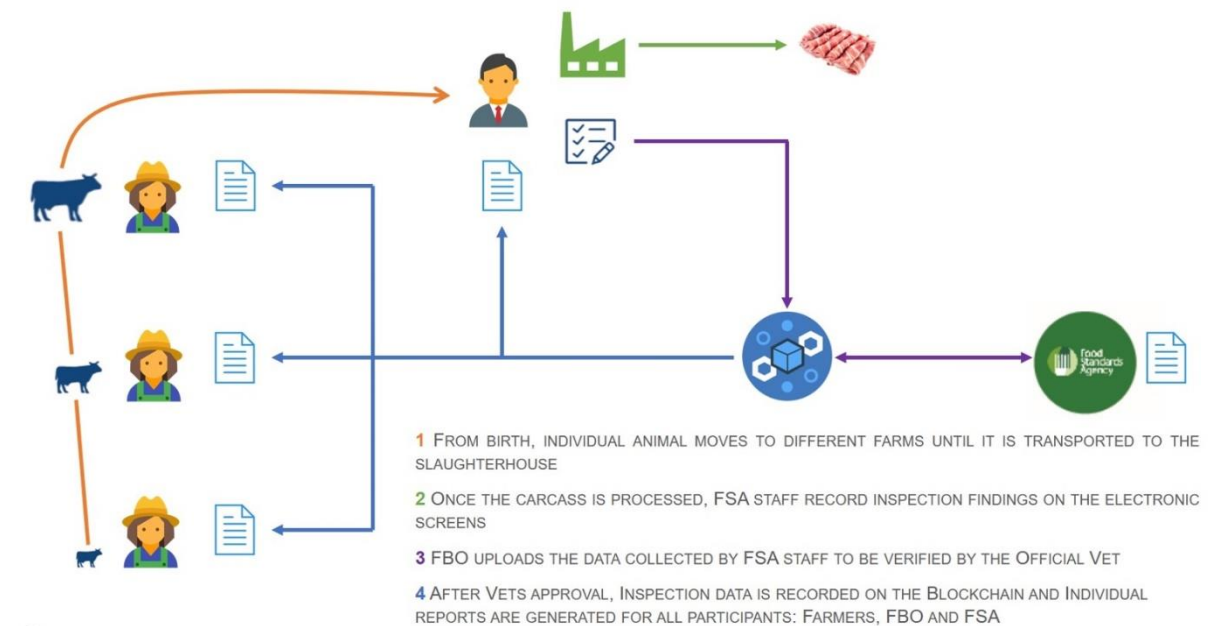
From: [Sect 40]

Sent: 03 July 2018 10:48

To: [Sect 40]

Subject:

FSA Blockchain Pilot in Slaughterhouse



18 CCIR Blockchain Pilot Data

From: [Section 40]
Sent: 26 June 2018 16:48
To: [Section 40]
Cc: Richard Collier <Richard.Collier@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>; [Section 40]
Subject: RE: CCIR Blockchain Pilot Data

Thank you [Section 40],

I'll check these figures against FBO figures and with the OV during the next days.

Thank you.

Kind regards,

[Section 40]

Science Evidence and Research Division
Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Section 40] **M:** [Section 40] **E:** [Section 40]

From: [Section 40]
Sent: 26 June 2018 16:34
To: [Section 40]
Cc: Richard Collier <Richard.Collier@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>; [Section 40]
Subject: RE: CCIR Blockchain Pilot Data

[Section 40]

I am not comparing the throughput against IRIS. I am comparing it against the number of animals entered on the Throughput for Charges app entered by either the OV or an MHI and then at the end of the charge period signed by the FBO (their representative).

I have attached the data pulled directly from the SIR database (where the Throughput for charging is entered).

[Section 40]

Food Standards Agency

Rm 109 Foss House,

Peasholme Green,

York YO1 7PR

Tel: [Section 40]

Mobile: [Section 40]

E-mail: [Section 40]

* Help us to save paper- please think before you print this e-mail

From: [Section 40]

Sent: 26 June 2018 16:24

To: [Section 40]

Cc: Richard Collier <Richard.Collier@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: CCIR Blockchain Pilot Data

Hi [Section 40],

I've contacted the FBO and I've compared the blockchain throughput data against IRIS data.

On the w/c on the 4th June there's a discrepancy ([Section 40]) and the FBO confirmed on the phone 2 csv files are missing. This might be explained by both interface breakdown and FBO manager responsible for csv upload being on annual leave during this period.

I'll follow up on this and make sure all throughput sources match with each other.

Best regards,

[Section 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Section 40] **M:** [Section 40] **E:** [Section 40]

From: [Section 40]

Sent: 26 June 2018 15:10

To: [Section 40]

Cc: [Section 40] ; Richard Collier <Richard.Collier@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: CCIR Blockchain Pilot Data

[Section 40]

Thank you, however, when I compare this against the throughput records for each day I have found a 4% variance. Throughput for Charges has 145 cattle more in the same period. Is there any possibility in some not appearing on the Blockchain figures?

[Section 40]

Food Standards Agency

Rm 109 Foss House,

Peasholme Green,

York YO1 7PR

Tel: [Section 40]

Mobile: [Section 40]

E-mail: [Section 40]

* Help us to save paper- please think before you print this e-mail

From: [Section 40]

Sent: 26 June 2018 12:19

To: [Section 40] **Subject:** CCIR Blockchain Pilot Data

Hi [Section 40],

This data may be more useful to you?

[Section 40]

Data Technician

Information and Knowledge Management

Food Standards Agency

Kings Pool, Foss House, York, YO1 7PR

Tel: [Section 40]

Mob[Section 40]

Email: [Section 40]

18R Attachment msg FW Blockchain infographic

-----Original Message-----

From: Caroline Kitson

Sent: 03 July 2018 12:39

To: [Sect 40]>

Subject: FW: Blockchain infographic

Hi [Sect 40]

Big thanks for doing this.

You should have seen the comments from Sian and the agreed title. Wondering if we should explain FBO Food Business Operator in the first instance. Also bottom LH lower case 'birth' and 'farm' also remove hyphen from 'collected' or not split over two lines?

Can the infographic be sized for both Twitter and FB?

Thanks again

Caroline

From: Sian Thomas
Sent: 03 July 2018 12:17
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>; [Sect 40]
Cc: [Sect 40]
Subject: RE: Blockchain infographic

Yes. All good. Typo in the bottom text on A1 – missing space. But otherwise all good. And title is fine.

Thanks Caroline

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H 9EX | 02072768761 | 07770596749
| @drsiant

From: Caroline Kitson
Sent: 03 July 2018 12:14
To: Sian Thomas <<<mailto:Sian.Thomas@food.gov.uk>>
Sian.Thomas@food.gov.uk>; [Sect 40]
Cc: [Sect 40]
Subject: FW: Blockchain infographic

Hi Sian and [Sect 40] –

With thanks to [Sect 40], the text has been added to the infographic – can you confirm that A1 has the text in the correct position? I think it needs a title suggest – ‘FSA Blockchain pilot in slaughterhouse’

[Sect 40] - apologies for the delay have had major IT problems for the last hour.

Thanks all

Caroline

From: [Sect 40]
Sent: 03 July 2018 10:53
To: Caroline Kitson <<mailto:Caroline.Kitson@food.gov.uk>>
Caroline.Kitson@food.gov.uk>
Subject: Blockchain infographic

Hi Caroline, please send through any amends by midday and we'll incorporate.

Thanks

[Sect 40]

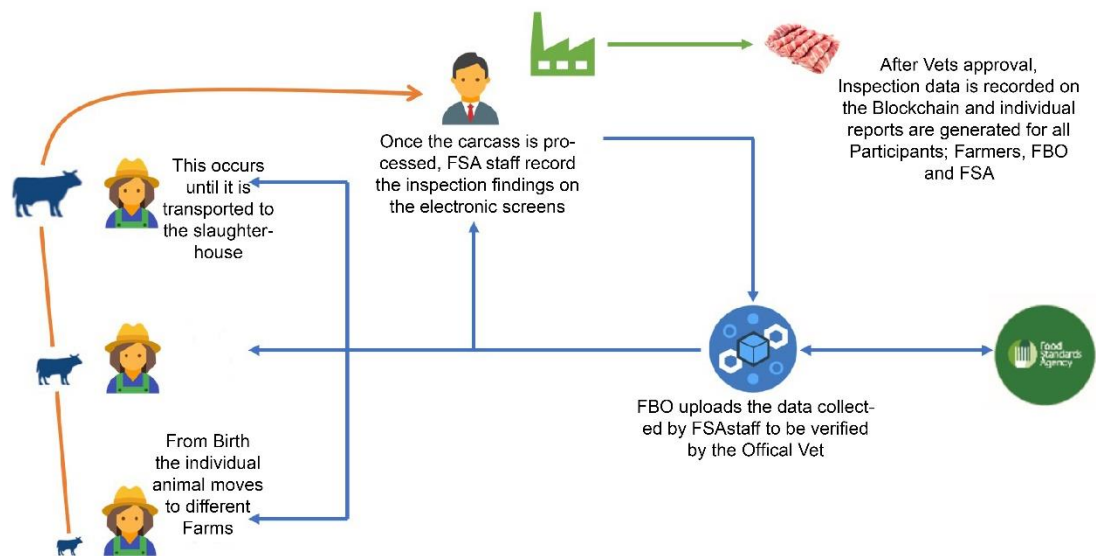
From: [Sect 40]
Sent: 03 July 2018 10:49
To: [Sect 40]
Subject: FW:

[Sect 40]| Communications [Sect 40]| Food Standards Agency in NI

[Sect 40]| [Sect 40]

10a-c Clarendon Road, Belfast BT1 3BG

From: [Sect 40]
Sent: 03 July 2018 10:48
To: [Sect 40]



18R RE Blockchain infographic

From: Caroline Kitson

Sent: 03 July 2018 12:44

To: [Sect 40] >; Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]

Subject: RE: Blockchain infographic

Hi [Sect 40] – I've just sent an email attached with some further suggested amends.

Thanks

Caroline

From: [Sect 40]
Sent: 03 July 2018 12:42
To: Sian Thomas <Sian.Thomas@food.gov.uk>; Caroline Kitson <Caroline.Kitson@food.gov.uk>; [Sect 40]
Subject: RE: Blockchain infographic

Ah yes, sorry Sian we'll amend and send back shortly.

[Sect 40]

From: Sian Thomas
Sent: 03 July 2018 12:41
To: [Sect 40] .Caroline Kitson <Caroline.Kitson@food.gov.uk>; [Sect 40]
Subject: RE: Blockchain infographic

I am sure there must be, but why the random capital letters? Otherwise, happy once there is a title too.

Thanks

Sian

Head of Information Management, Food Standards Agency
Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]
Sent: 03 July 2018 12:37
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]
Subject: RE: Blockchain infographic

Thanks all, please see final version attached.

[Sect 40]

FOI 2250 -Information

From: Caroline Kitson

Sent: 03 July 2018 12:14

To: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]

Cc: [Sect 40]

Subject: FW: Blockchain infographic

Hi Sian and [Sect 40] –

With thanks to [Sect 40] and [Sect 40], the text has been added to the infographic – can you confirm that A1 has the text in the correct position? I think it needs a title suggest – ‘FSA Blockchain pilot in slaughterhouse’

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Thanks all

Caroline

From: [Sect 40]

Sent: 03 July 2018 10:53

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>

Subject: Blockchain infographic

Hi Caroline, please send through any amends by midday and we'll incorporate.

Thanks

[Sect 40]

From: [Sect 40]

Sent: 03 July 2018 10:49

To: [Sect 40]

Subject: FW:

[Sect 40] | Communications [Sect 40] | Food Standards Agency in NI

[Sect 40] | [Sect 40]

10a-c Clarendon Road, Belfast BT1 3BG

From: [Sect 40]

Sent: 03 July 2018 10:48

To: [Sect 40]

Subject:

Attachment here : See [18 Attachment msg] for information

19 Attachment to Email 26 June 2018 Blockchain Briefing

19 Attachment to email 26 June 2018

User need that our pilot delivers (and why blockchain)

The FSA is responsible for the provision of information about the conditions of animals at the point of slaughter back to the farmer. It is a legislative requirement for the Official Vet to check the data.

The blockchain pilot replaces the traditional process of double data entry. Data is taken directly from the Information Management system of the FBO (abattoir), validated by the vet and published to the blockchain (linux permissioned hyperledger).

This has been in place and running for 2 months, with double data entry being assessed and stopped after 3 weeks. For the pilot abattoir, the blockchain is the only means of data capture and storage for regulatory compliance. The identified benefits include a reduction of 10 minutes vet effort per batch of animals (typically one a day, sometimes up to 3).

The change in approach has meant that the Agency has been able to make better use of the ancillary data. Information about the previous farms that the cow has been on have been hugely insightful in relation to the spread of disease. These additional insights are being monitored and shared with the Defra family who own the policy responsibility. This benefit has not been fully quantified but conservative estimates suggest that removing liver fluke from the UK herd might result in £1m cows liver entering the human food chain (currently this would have to go to animal feed or be disposed of). Other conditions will have associated benefits – but 10% of animals at slaughter have liver fluke which is why this has been used as a quantifier.

Background (including the PoC from Defra)

In January Defra held a workshop as part of developing the PoC for the red meat supply train. As part of this work, the abattoir was highlighted as the part of the chain where there was not transparency of data. The principles in the PoC were applied to the data collection processes in the abattoir and a decision was taken to test development of a small pilot to use blockchain to test feasibility with key data transfer in the abattoir – specifically the Collection and Communication of Inspection Results.

Data feeds for the initial pilot are primarily from the animal passport via the abattoir Information Management system. The data standards for conditions was worked up in collaboration with the industry over an extended period last year and the year before. The success of the project is partly depended on having the agreed data model from which to build the blockchain.

[Out of scope]

Question replies

- **What are the blockchain business models and what are the new sources of corporate competitiveness in using blockchain technology? (Network effects, transaction cost efficiency, information control, increased speed, other?)**

In our pilot, the key benefit is the availability of data to those with permission to view it in addition to the timeliness of availability of the data. [Out of scope]

For our pilot, validation of the data by the vet, where the approval can be viewed as applying the hashing function provides delivery of our legal requirements in a unique way.

[Out of scope]

- **What are the trade related aspects of blockchain that competition policy need to consider**

We are testing the tech in the food space. This is viewed by the retailers as a pre-competitive space (regulatory compliance in relation to food safety).

Whilst we have tested with IBM using Linux hyperledger – the fabric is open source so available to anyone. [Out of scope]

20 Re Grocer and blockchain

From: Sian Thomas

Sent: 25 June 2018 09:23

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>; Julie Pierce <Julie.Pierce@food.gov.uk>

Subject: RE: Grocer and blockchain

Thanks Caroline. I think we should be more assertive that it is first, but invite others to provide evidence of others. I had hoped being a journalist that she would go away and check. I do look out for this stuff (as [Sect 40]) and we have not seen anything about Regulators using blockchain as part of delivering their regulatory responsibilities. And if we don't get anything back (we do this too... etc) then we can be more confident in the claim going forward.

Let me know if you need anything from me. I am at home today but in the office the rest of the week.

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Caroline Kitson

Sent: 25 June 2018 08:34

To: Julie Pierce <Julie.Pierce@food.gov.uk>; Sian Thomas
<Sian.Thomas@food.gov.uk>

Subject: RE: Grocer and blockchain

Morning

Please find attached the article in the Grocer.

Will be working on a news story for food.gov over the next few days.

Regards

Caroline

From: Julie Pierce

Sent: 25 June 2018 07:59

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>

Subject: Grocer and blockchain

Could I have a copy of Sian's interview with the Grocer please?

FOI 2250 -Information

Thanks

Julie Pierce

Director of Openness, Data and Digital

Food Standards Agency

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Clive House

70 Petty France

London

SW1H 9EX

T +44 (0) 207 276 8023

M +44 (0) 7786 110 373

@foodgov

@juliepierce77

21 Re Blockchain - PWG and other engagement - APPROACH TO NOTE

From: Simon Dawson

Sent: 21 June 2018 06:13

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Cc: Martin Evans <Martin.Evans@food.gov.uk>; [Sect 40] FSA Communications <fsa.communications@food.gov.uk>

Subject: Re: Blockchain - PWG and other engagement - APPROACH TO NOTE

Hi Sinead

Thanks for this and agree we need to manage communications carefully on this to avoid damaging great collaborative relationships you have built with industry pilot participants. I hadn't seen paper and was unaware who had commissioned and written it.

Fortunately it won't come up for discussion at PWG as it's for info only, but do we need to agree how to handle comms more effectively going forward?

Best wishes

Simon

Sent from VMware Boxer

On 20 Jun 2018 13:46, Sian Thomas <Sian.Thomas@food.gov.uk> wrote:

Martin Evans <Martin.Evans@food.gov.uk>; Simon Dawson
<Simon.Dawson@food.gov.uk>

Cc: FSA Communications <fsa.communications@food.gov.uk>; [Sect 40]

Hi Both,

Pleased to see a paper on blockchain going to PWG tomorrow. Let me know if you need any support – happy to be available via skype for the duration – as I am sure will [Sect 40] .

I was pleased to be copied into the paper by Richard, but it was going without scrutiny and contained some information which we did not have permission to share. Over recent days [Sect 40] and I have been clarifying what is for the public domain and what is not in advance of the board (which went well) and some media activity that comms have arranged. We have clarified that Dunbia do not want to be named at this stage. [out of scope]. While this work is exciting we do need to make sure that we all take appropriate action to share what we have agreed and not more in a formal capacity. The paper did name Dawn – who of course have asked to be identified as Dunbia and for this not to be public without their permission!

Appreciate it if we could have oversight of any external comms to make sure that it all aligns. For our part, we will start to highlight what is internal and what can be shared as we are managing a wide range of audiences here. I have been very clear in briefing for Jason about what is in the public domain. But perhaps it is timely to share something on the digital workplace so that everyone can access the brief.

Hope this makes sense, trying to manage it so that we get the full value and people are keen to continue to work with us. [out of scope] No harm done, but keen to keep it that way.

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

21R RE Blockchain infographic (5)

From: [Sect 40]
Sent: 03 July 2018 12:34
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: RE: Blockchain infographic

Just another version

[Sect 40]

Science Evidence and Research Division
Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX
T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: Sian Thomas
Sent: 03 July 2018 12:17
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>; [Sect 40]
Cc: [Sect 40]
Subject: RE: Blockchain infographic

Yes. All good. Typo in the bottom text on A1 – missing space. But otherwise all good. And title is fine.

Thanks Caroline

Sian

Head of Information Management, Food Standards Agency
Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Caroline Kitson
Sent: 03 July 2018 12:14
To: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]
Cc: [Sect 40]
Subject: FW: Blockchain infographic

FOI 2250 -Information

Hi Sian and [Sect 40] –

With thanks to [Sect 40], the text has been added to the infographic – can you confirm that A1 has the text in the correct position? I think it needs a title suggest – ‘FSA Blockchain pilot in slaughterhouse’

[Sect 40] - apologies for the delay have had major IT problems for the last hour.

Thanks all

Caroline

From: [Sect 40]
Sent: 03 July 2018 10:53
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>
Subject: Blockchain infographic

Hi Caroline, please send through any amends by midday and we'll incorporate.

Thanks

[Sect 40]

From: [Sect 40]
Sent: 03 July 2018 10:49
To: [Sect 40]
Subject: FW:

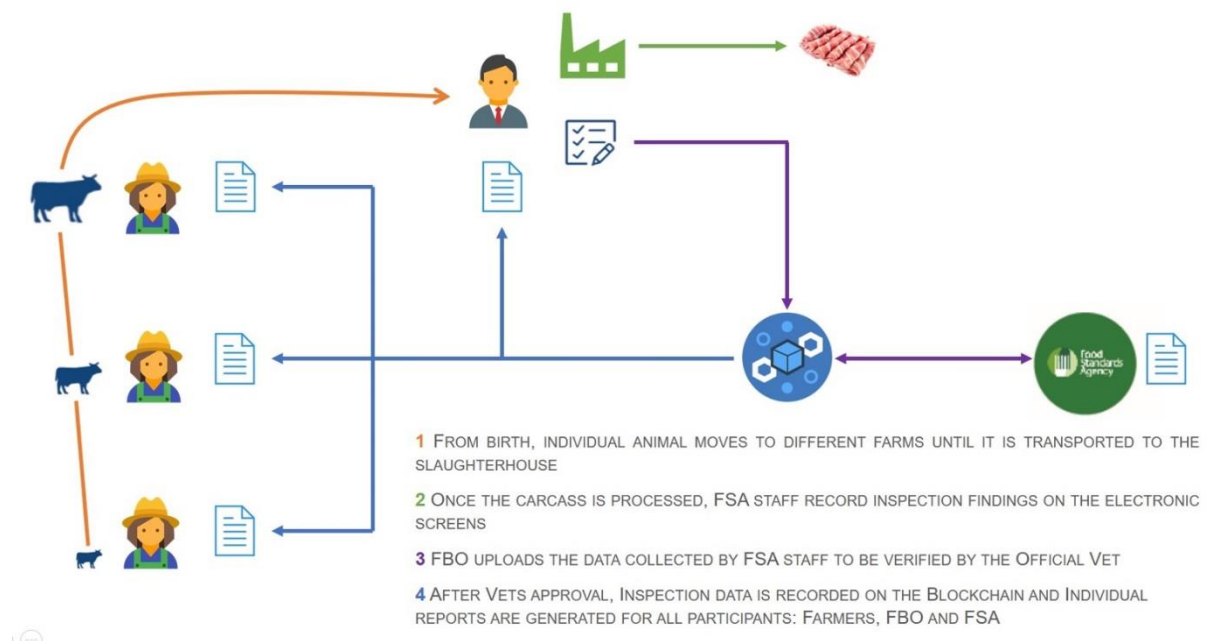
[Sect 40] | Communications [Sect 40] | Food Standards Agency in NI

[Sect 40] | [Sect 40]

10a-c Clarendon Road, Belfast BT1 3BG

From: [Sect 40]
Sent: 03 July 2018 10:48
To: [Sect 40]
Subject:

FSA Blockchain Pilot in Slaughterhouse



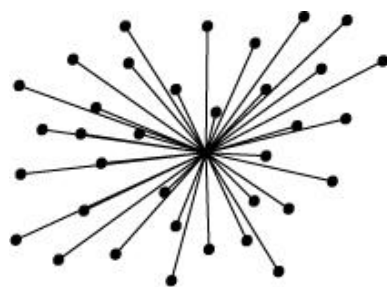
23 Attachment PWG Information Paper

Food Standards Agency

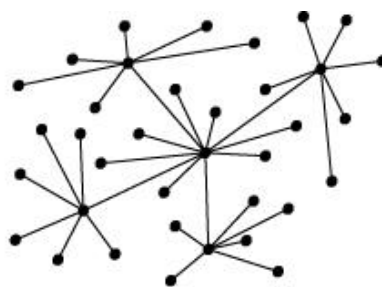
Partnership Working Group Meeting – 21 June 2018

Trialling Blockchain – Information Paper

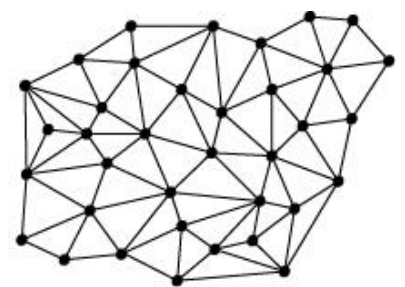
1. During the last couple of years, the term 'Blockchain' has become a trendy word across the news, social networks and the internet in general.



centralised



decentralised



distributed

2. In short, blockchain is a continuously growing list of records called blocks, which are linked and secured. Essentially, it's another way of collecting data, but the data within the chain cannot be altered without leaving an audit trail.
3. Recently, the FSA has put together its own blockchain in record time. FSA Vet [Section 40] who is currently working in Sian Thomas' Information Management team is taking a lead with this work.

What made the FSA decide to build a blockchain?

4. The FSA saw potential in this technology to improve transparency across the Food supply chain in particular to improve the Collection and Communication of the Inspection results (CCIR) back to farmers which is a legal requirement.

How is data currently collected?

5. The post-mortem inspection findings are currently entered into a system by the meat inspectors working on the line. And at the end of the day the Food Business Operator (FBO) prints and hands a report for the FSA team to input the information into another database (IRIS).

So what will be different about a blockchain?

6. We are running a Pilot scheme so that FBOs' software will upload the information into the blockchain (after Official Veterinarian's validation) and the platform will automatically generate specific reports / dashboards for all the parties involved (FBO, FSA and Farmer). This pilot will avoid duplicating information into IRIS and means that not only the last owner of the animal will have access to the information/report but all owners or keepers during the animal's lifetime, from its birth to slaughter.

What are the benefits to farmers/animals, FBOS and FSA?

7. The aim of the pilot is to communicate the inspection results, but the technology could support access for farmers to a 'smart report' - so they can get the most out of this and other information, helping them to improve the status/standards (both of animal health and welfare), to take better and more cost effective decisions.
8. This is good for the Agency and our government colleagues because could potentially cut down on animal disease and suffering and make food safer. For example, currently about 10% of cows have liver fluke – this is usually caught

early in their life but currently it is only the last farmer or keeper that receives the CCIR information so previous farmers are unaware of a problem which might result in reduction in the effective use of vet drugs or implementing sub-optimal feeding regimes..

9. For meat inspectors and vets they won't have the need to duplicate the information on two systems, saving them time so they can be more focused on activities other than data re-entry which does not add value.

Where is the pilot taking place?

10. The first pilot has been running for 2 months. Following effective roll-out double data entry was stopped in Mid May. [Out of scope]

What's next?

11. This is the first time a blockchain system has been deployed in a regulatory environment – so we're all very interested to see how the pilots work. PWG will be updated as this work develops.

20 June 2018

23 RE Blockchain Throughput - PWG Information Paper

Attachment to email

Oops – more haste!

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]

Sent: 20 June 2018 13:47

To: Sian Thomas <Sian.Thomas@food.gov.uk>; Richard Collier
<Richard.Collier@food.gov.uk>

Cc: [Sect 40]

Subject: RE: Blockchain Throughput - PWG Information Paper

Hi Sian,

FOI 2250 -Information

I can't see a document attached with tracked changes?

Thanks,

[Sect 40]

[Sect 40]

Corporate Support Unit

Food Standards Agency

Tel: [Sect 40]

Mobile: [Sect 40]



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From: Sian Thomas

Sent: 20 June 2018 13:38

To: [Sect 40] >; Richard Collier <Richard.Collier@food.gov.uk>

Cc: [Sect 40]

Subject: RE: Blockchain Throughput - PWG Information Paper

Hi Both,

I have suggested some amends in track changes. Primarily not to exceed our areas of responsibility but also because we do not have permission from Dunbia to share that they were part of the pilot. Appreciate it if you could make the changes before it is sent out.

FOI 2250 -Information

Thanks for your help with this

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]

Sent: 20 June 2018 13:28

To: Sian Thomas <Sian.Thomas@food.gov.uk>; Richard Collier
<Richard.Collier@food.gov.uk>

Cc: [Sect 40]

Subject: RE: Blockchain Throughput - PWG Information Paper

No probs – will hold off.

[Sect 40]

Corporate Support Unit

Food Standards Agency

Tel: 0207 276 8042

Mobile: 07876 577375



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From: Sian Thomas
Sent: 20 June 2018 13:27
To: Richard Collier <Richard.Collier@food.gov.uk>; [Sect 40]
Cc: [Sect 40]
Subject: RE: Blockchain Throughput - PWG Information Paper

I am just having a read and have a couple of edits. Will get them over imminently if that is OK [Section 40]. We need to make sure we have consistency and I am doing some press interviews this afternoon so sending something different out tomorrow would not be good.

Thanks

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Richard Collier
Sent: 20 June 2018 13:05
To: [Sect 40]
Cc: [Sect 40] >; Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: RE: Blockchain Throughput - PWG Information Paper

[Sect 40] – information paper for PWG. Sorry again for the delay.

Regards

Richard

Richard Collier
Head of Finance – Charging
Food Standards Agency
Tel: 01904 232144
Email: richard.collier@food.gov.uk

From: [Sect 40]

Sent: 20 June 2018 09:17

To: Richard Collier <Richard.Collier@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>

Cc: [Sect 40]

Subject: RE: Blockchain Throughput

Richard,

Yes sure,

[Sect 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: Richard Collier

Sent: 19 June 2018 22:50

To: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]

Cc: [Sect 40]

Subject: RE: Blockchain Throughput

Sian / [Sect 40]

[Sect 40] has reminded me about this and Partnership Working Group is on Thursday. Are you content that I do this?

Many thanks

Morning Richard,

Yes please feel free to use the published material.

Kind regards,

[Sect 40]

Richard Collier

Head of Finance – Charging

Food Standards Agency

Tel: 01904 232144

Email: richard.collier@food.gov.uk

From: Richard Collier

Sent: 04 June 2018 13:44

To: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]

Cc: [Sect 40]

Subject: RE: Blockchain Throughput

Sian / [Sect 40]

Further to the emails below are you content that we use the material published on the Digital Workplace last week as an update on Blockchain for the Partnership Working Group meeting on 21 June?

I should hopefully be able to cover any basic questions at the meeting and refer to you for an answer on anything more complicated after the meeting. This would save either of you from having to take part in the meeting.

Please let me know what you think.

Many thanks

Richard

Richard Collier

Head of Finance – Charging

Food Standards Agency

Tel: 01904 232144

Email: richard.collier@food.gov.uk

From: [Sect 40]
Sent: 04 June 2018 13:32
To: Richard Collier <Richard.Collier@food.gov.uk>
Cc: Martin Evans <Martin.Evans@food.gov.uk>
Subject: RE: Blockchain Throughput

Hi Richard,

I have spoken to Martin and agreed it would be good to include as an information paper and then if they have any questions we can answer them as best we can.

Thanks for your help Richard.

[Section 40]

[Sect 40]

Corporate Support Unit
Food Standards Agency
Tel: 0207 276 8042
Mobile: 07876 577375



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From: Richard Collier
Sent: 04 June 2018 11:32
To: [Sect 40]
Cc: Martin Evans <Martin.Evans@food.gov.uk>
Subject: RE: Blockchain Throughput

Morning [Sect 40]

I know you are trying to condense things because of the pressure on the agenda. In view of this and that the meeting will be in York a written update may be a good idea so that Sian Thomas or [Sect 40] do not need to travel.

Would it make sense to use the information on the Digital Workplace that [Sect 40] published (<https://foodgov.sharepoint.com/science/Pages/Team-Updates-May-2018/Trialling-Blockchain.aspx>)? Provided Sian and [Sect 40] agree I could paste this into a Word document and it could be issued with all the other papers for the meeting. I had a meeting about this a couple of weeks ago with [Sect 40] and I am due to have another one on Friday with Sian and so I should be able to cover any basic queries about this that come up at the PWG meeting?

What do you think? Shall I suggest this to Sian and [Sect 40]?

Regards

Richard

Richard Collier
Head of Finance – Charging
Food Standards Agency
Tel: 01904 232144
Email: richard.collier@food.gov.uk

From: [Sect 40]
Sent: 04 June 2018 11:14
To: Richard Collier <Richard.Collier@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>
Subject: FW: Blockchain Throughput

Morning Richard and Martin,

Shall I include this on the PWG agenda? Martin, rather than ask Sian to come for 15 minutes – could you update or could we provide an information paper?

Thanks,

[Sect 40]

Corporate Support Unit
Food Standards Agency
Tel: 0207 276 8042
Mobile: 07876 577375



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From: Richard Collier
Sent: 17 May 2018 15:53
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Cc: [Sect 40] >; Ramon Romero <Ramon.Romero@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>
Subject: Blockchain Throughput

Sian

I had a very useful meeting yesterday with [Sect 40] at which he outlined the work to date on the project for condition codes and CCIR blockchain with Dunbia / Dawn (at the Carnaby site) and IBM.

I am very interested how this will develop, and what will happen at the end of the pilot, and would like to be kept up to date with progress. Ramon Romero would

appreciate this too particularly because of his ownership of IRIS. For information, in the medium term I would like to decommission the separate throughput system that I own to eliminate some duplication of effort.

I wondered how this pilot is being taken forward with the rest of industry, to update and engage with industry stakeholders if not the wider industry community. It would seem a natural issue for discussion with industry at Partnership Working Group. I have copied in Martin Evans because he may have a view on this.

Regards

Richard

Richard Collier

Head of Finance – Charging

Food Standards Agency

Tel: 01904 232144

Email: richard.collier@food.gov.uk

23R FW Blockchain infographic

From: Sian Thomas

Sent: 29 June 2018 10:37

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>

Subject: FW: Blockchain infographic

Here is the infographic – [Sect 40] has re-done it so that it is ours (not IBMs).

We have checked image ownership.

Thanks

Sian

FOI 2250 -Information

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]

Sent: 29 June 2018 10:35

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: Blockchain infographic

Hi Sian,

Here it goes FSA's one. The other belongs to IBM.

Regards,

[Sect 40]

Science Evidence and Research Division
Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: Sian Thomas

Sent: 28 June 2018 16:46

To: [Sect 40]

Subject: FW: Blockchain infographic

Said you were copied and might help – please do if you can. Just booking my hotel...

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Caroline Kitson
Sent: 28 June 2018 16:44
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: Blockchain infographic

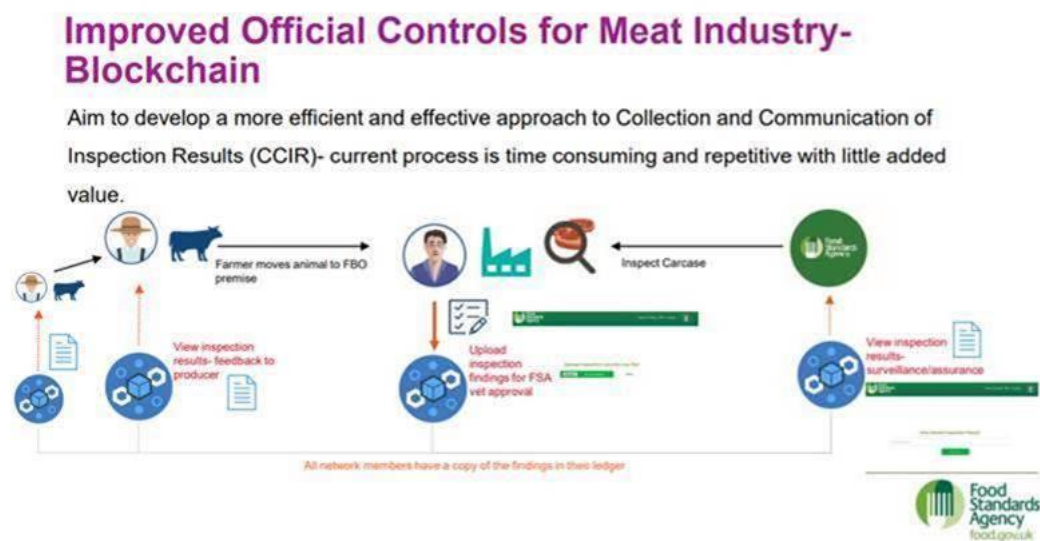
Hi Sian

Do you hold the following infographic? I think it might have been created by MMD Comms colleagues, but can't find in any of our files etc.

Wanted to look at the original to possibly use for social media. Also have to delay publishing Blockchain news story until Monday as there may be another that has to take a priority.

Thanks

Caroline

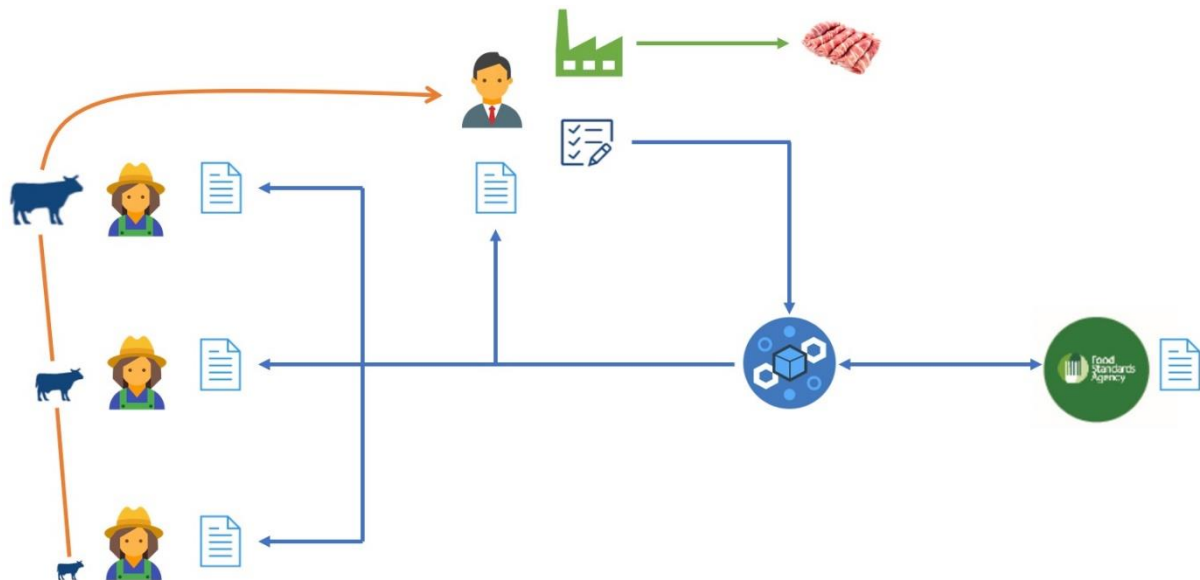


Caroline Kitson | Uwch-reolwr Cyfathrebu/ Senior Communications Manager |
Asiantaeth Safonau Bwyd /Food Standards Agency | Llawr 11/11th Floor | Ty
Southgate/Southgate House | Wood Street | Caerdydd/Cardiff | CF10 1EW

Ffon/Tel: 029 2067 8916

Symudol/Mobile: 07969 668432

Cynaliadwyedd - Ystyriwch cyn argraffu/Sustainability - Think before you print



31R EMT and science

From: Julie Pierce
Sent: 04 June 2018 17:22
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: EMT and science

Sian,

Guy is presenting this at EMT tomorrow morning. I didn't know blockchain and you were going to get such coverage from him! Anyway, nice for him to say.

Is there anything you want me to say? I am more worried about Surveillance than BC, TBH. For the reasons we discussed earlier. This might be a hook for me to mention that.

Best regards

FOI 2250 -Information

Julie Pierce

Director of Openness, Data and Digital

Food Standards Agency

Floors 6 & 7

Clive House

70 Petty France

London

SW1H 9EX

T +44 (0) 207 276 8023

M +44 (0) 7786 110 373

@foodgov

@juliepierce77

33 RE Update on blockchain pilot

From: Sian Thomas

Sent: 15 June 2018 16:56

To: Julie Pierce <Julie.Pierce@food.gov.uk>

Cc: [Sect 40]> Colin Sullivan <Colin.Sullivan@food.gov.uk>; Nina Purcell <Nina.Purcell@food.gov.uk>; Britt Kritzler <Britt.Kritzler@food.gov.uk>; Christopher Hitchen <Chris.Hitchen@food.gov.uk>; Jason Feeney <jason.feeney@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>

Subject: RE: Update on blockchain pilot

Yes. Sorry, I should have made that clear.

Sent from VMware Boxer

On 15 Jun 2018 16:53, Julie Pierce <Julie.Pierce@food.gov.uk> wrote:

Sian,

Re para 2, I think the board you refer to there is the Investment Board. Is that correct?

Julie

From: Sian Thomas

Sent: 15 June 2018 16:47

To: Jason Feeney <jason.feeney@food.gov.uk>

Cc: Julie Pierce <Julie.Pierce@food.gov.uk>; Martin Evans

<Martin.Evans@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>;

Colin Sullivan <Colin.Sullivan@food.gov.uk>; Nina Purcell

<Nina.Purcell@food.gov.uk>; Christopher Hitchen <Chris.Hitchen@food.gov.uk>;

[Sect 40]; Britt Kritzler <Britt.Kritzler@food.gov.uk>

Subject: Update on blockchain pilot

Dear Jason,

I thought I should provide an update on the blockchain pilot – in advance of the board next week [Out of Scope]

And finally, following the inclusion of a couple of paragraphs for your update, we are working with comms to start telling our story externally. Just the work to date at the moment – but supporting this with the development of a data story that we will circulate once drafted and then make available for all on the copylist to use in support of delivering this narrative.

The 'food and blockchain' collaborative group that we initiated is planning a third meeting at UCL in early July. We are encouraging IBM and [Section 43] to develop a collaborative sandbox in which they can deploy the code from our pilot. Such that if industry want to develop this further we do not have to be involved and there is no additional cost to us. Other items of interest and relevance that were discussed were pigs with tags at the individual animal level for export to China and the blockchain that supported this (which challenges my understanding of the status quo for pigs and some of the previous assertions made in relation to individual tagging) and also the possibility of linking retailer data to data on our blockchains which [Sect 40]; and I will be following up next week. Also, lots of non-meat blockchain info.

Happy to discuss, but please let me know if you require any additional information in advance of the board next week.

Thanks

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

33R CCIR Blockchain Pilot Presentation Outcome

From: [Sect 40]

Sent: 22 May 2018 11:08

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: CCIR Blockchain Pilot Presentation Outcome

Morning Sian,

Yesterday at Nobel House I've presented the FSA CCIR Blockchain pilot to 3 members of DEFRA ([Sect 40], [Sect 40], and [Sect 40]) and two APHA members dialled-in ([Sect 40] and [Sect 40]):

I've started with a brief introduction sharing and going through IBM pilot slides (DEFRA PoC and our Pilot at the slaughterhouse stage covering the CCIR as a legal requirement) followed by the Storyline presentation and Interface demo.

Some notes were taken by myself during the meeting covering the following subjects:

- DEFRA members asked whether FSA was thinking to roll-out this pilot in other species other than Cattle + [Sect 40] (APHA) questioned if a similar project was on FSA regarding FCI

– I've mentioned at this stage we were just looking to engage with other food group for farmer engagement purposes and Dunbia were looking to extend this project to their other plants (using Hellenic). Also told the attendees this pilot purpose aims to demonstrate the value and advantages for all stakeholders (DEFRA and APHA included) highlighting at the same time DLT features towards better transparency, security etc. Regarding FCI, it was clear for all participants that DLT can improve the information quality and its downstream communication.

Following this question DEFRA enhanced the lack of individual id. recording by the FBO in **Sheep abattoirs** prior to slaughter and the need for strengthened enforcement action by FSA, stating traceability was fully ensured at the market level – I've raise my concerns about markets efficiency to keep full traceability of mixed batches, providing incomplete information on the movement license / FCI

- After the Storyline presentation (focusing on the Conditions mapping) [Section 40](APHA) referred the historic CCIR work done with Ramon and the APHA-FSA meeting about data sharing and crossing Disease and CCIR information (APHA Disease Surveillance dashboard link <https://public.tableau.com/profile/siu.apha#!/vizhome/CattleDashboard/CattleDashboard>) APHA data not as granular (by county) as FSA's. It was demonstrated this pilot will help to ascertain with more accuracy the 'conditions origin' allowing the identification (providing Inspection reports to all farmers).
- [Sect 40] asked how Blockchain can provide a solution for historic records transfer and interoperability with different systems – At this moment in time (IBM confirmation) various IT solutions available on the market working on blockchain allowing communication with different systems – blockchain layer added on top of existing systems enabling intercom.
- DEFRA and APHA not planning in short or mid-term to engage directly with any Blockchain pilot. It was mentioned some examples of industry looking into DLT to improve their traceability systems allied with smart devices (e.g. Cranswick report publication). This technology is still at an early stage of development but already being tested worldwide, with constant updates providing already viable and cost/effective solutions across different sectors.
- Overall attendees have realised the DLT potential for overall improvement of the present systems in place. It was acknowledged the need for more and better cooperation across government departments (DEFRA – APHA – FSA) and external stakeholders engagement to define future strategy guaranteeing successful implementation and regulation compliance.

Kind regards,

[Sect 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

34R RE Blockchain Throughput

From: Richard Collier

Sent: 17 May 2018 22:30

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Cc: [Section 40] >; Ramon Romero <Ramon.Romero@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>

Subject: RE: Blockchain Throughput

Many thanks Sian – knowing more on the background and current state of play is very helpful. If you could include Ramon and I in future updates that would be much appreciated.

Diogo quickly worked through some of the presentations with me yesterday but there may be issues that we can cover when you are in York in June. I am likely to be out on 7 June but I will be in the office on 8 June.

Regards

Richard

Richard Collier

Head of Finance – Charging

Food Standards Agency

Tel: 01904 232144

Email: richard.collier@food.gov.uk

From: Sian Thomas

Sent: 17 May 2018 16:49

To: Richard Collier <Richard.Collier@food.gov.uk>

Cc: [Section 40] ; Ramon Romero <Ramon.Romero@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>

Subject: RE: Blockchain Throughput

Hi Richard,

That is great. We are taking this pilot forward with full support from Colin, Martin and Simon. I provide them with regular updates – and I forward these on beyond the immediate team. Happy to include you and Ramon in updates going forward if this is useful.

[Section 40] and I met with IBM again this week – our current plan is to continue to roll out the pilot and deliver the final bit of dev work over the next couple of months. We are in the process of pulling together the business case for funding further investment and working out a schedule of activities. I anticipate that our work on the pilot will finish over the summer and at some point after this we will see whether industry are keen to take ownership. There is nothing particularly special about the plants we are working with and the data standards are the ones that are used across the industry and in IRIS. Indeed, it is the better quality data in the industry systems that have made this possible.

We have been liaising with Martin around comms of the project. I understand that there is an article about it in the next between the lines, and ultimately we will want to share with industry. We have been keeping Defra in the loop and also AHDB. If Martin is keen to have it presented at the Industry Group I would be very happy to do this or support someone else to present. So far, we have made good progress and I think the investment we have made has been money well spent.

With regard to switching off the throughput system – I am not sure that I fully understand what it does but if the data is also collected elsewhere (on the estate or by others in a way that is trusted) this seems like a sensible thing to do. We only need a single version of the truth – not multiple!

If you have any more questions please get in touch. If it would be helpful to have a presentation about what we have done so far do let me know – I will be in the York office on Thursday 7th June and am thinking of staying over until Friday 8th June if this might work.

Happy to take any further questions.

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Richard Collier

Sent: 17 May 2018 15:53

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Cc: [Section 40] Ramon Romero <Ramon.Romero@food.gov.uk>; Martin Evans
<Martin.Evans@food.gov.uk>

Subject: Blockchain Throughput

Sian

I had a very useful meeting yesterday with [Section 40] at which he outlined the work to date on the project for condition codes and CCIR blockchain with Dunbia / Dawn (at the Carnaby site) and IBM.

I am very interested how this will develop, and what will happen at the end of the pilot, and would like to be kept up to date with progress. Ramon Romero would appreciate this too particularly because of his ownership of IRIS. For information, in the medium term I would like to decommission the separate throughput system that I own to eliminate some duplication of effort.

I wondered how this pilot is being taken forward with the rest of industry, to update and engage with industry stakeholders if not the wider industry community. It would seem a natural issue for discussion with industry at Partnership Working Group. I have copied in Martin Evans because he may have a view on this.

Regards

Richard

Richard Collier

FOI 2250 -Information

Head of Finance – Charging

Food Standards Agency

Tel: 01904 232144

Email: richard.collier@food.gov.uk

35 RE Blockchain Traceability

From: Sian Thomas

Sent: 08 June 2018 08:39

To: Caroline Kitson <Caroline.Kitson@food.gov.uk>

Cc: Beverley Cook <Beverley.Cook@food.gov.uk>; Catherine Clarke <Catherine.Clarke@food.gov.uk>

Subject: RE: Blockchain Traceability

I have amended a bit and added some further info. Hope this is OK – but happy to discuss. As I said, I am in York today and so if you need me send me a skype and I will reply / arrange a call etc.

Thanks

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H

9EX | 02072768761 | 07770596749 | @drsiant

From: Caroline Kitson

Sent: 07 June 2018 17:52

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Cc: Beverley Cook <Beverley.Cook@food.gov.uk>; Catherine Clarke <Catherine.Clarke@food.gov.uk>

Subject: FW: Blockchain Traceability

Importance: High

Hi Sian

The Grocer is asking for information on the blockchain pilot, Heather has spoken to [\[Sect 40\]](#) at a recent event. I wanted to get an update when we catch up on Monday but this may pre-empt. Are we in a position to say anything about its early success or just stick to the information that we have used internally to date.

Currently we have the following:

The FSA saw potential in the use of blockchain technology in reporting in slaughterhouse, to improve transparency across the food supply chain and improve the collection and communication of the inspection results (CCIR) back to farmers, which is a legal requirement.

Currently, the post-mortem inspection findings are entered into a system by meat inspectors working on the line. And at the end of the day the food business operator (FBO) prints and hands a report to the FSA team to duplicate the same information into another database.

Utilising blockchain technology we have been running this pilot - the food business operator exports the inspection results, which are validated by the Official Vet and approved for upload to the Blockchain (permissioned ledger). Data on the Blockchain are available in line with the permissions: FSA can access all of the data, the abattoir can access data that they have uploaded, farmers will be able to access data about animals from their farm. This negates the need for double entry of data into different systems and ensures there is a single authoritative source of data. It also means that all of the keepers of an individual animal will have access to data that could help them manage cows in their care in future, for example by targeting medicines to where they will have most impact. Of course, the system is expandable to include other measures of importance to farmers – the FSA pilot demonstrates application in the food safety context.

The pilot is taking place in a cattle plant, and we are implementing further phases to the pilot to roll this out in additional plants over the coming weeks and months. It will be possible to extend this pilot to other species and potentially also different types of premises, such as cutting plants. We are working with the industry to ensure that this builds on existing evidence of what works.

Importantly this is the first time a blockchain system has been deployed in a regulatory environment – once the pilot data was validated the previous data collection mechanisms for the pilot plant were stopped.

The Agency is keen to hear about other instances of emerging technologies being tested in a food regulatory context, particularly where there are existing data standards being applied in the new approach.

Grateful if you could review and amend, and if able provide any update that could be used with the Grocer.

Many thanks

Caroline

From: Tom Niblet
Sent: 07 June 2018 16:45
To: Caroline Kitson <Caroline.Kitson@food.gov.uk>
Cc: Catherine Clarke <Catherine.Clarke@food.gov.uk>; Beverley Cook <Beverley.Cook@food.gov.uk>
Subject: Blockchain Traceability
Importance: High

Hi Caroline,

I think this is one for you.

[Sect 40] from The Grocer magazine has been in touch this afternoon. He is asking for information about a blockchain traceability trial we are undertaking. [Sect 40] told me that his [Sect 40] has spoken in detail with Heather about this at the recent BMPA conference.

[Sect 40] has asked if we can provide an update on this tomorrow. Is this all okay?

Thanks,

Tom

35R RE Update on blockchain pilot – CCIR

From: [Sect 40]
Sent: 14 May 2018 09:33
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: RE: Update on blockchain pilot - CCIR

Hi Sian,

Just drafted this short presentation on what DLT can well us to improve Inspection Checks and Resource Saving for FSA.

(sure this list can be easily improved)

Please let me know whether could be an helpful tool to move our project forward and demonstrate the positive financial impact and inspection improvement.

Best regards,

[Sect 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] M: [Sect 40] E: [Sect 40]

From: Sian Thomas

Sent: 14 May 2018 09:05

To: Jason Feeney <jason.feeney@food.gov.uk>; Nina Purcell <Nina.Purcell@food.gov.uk>; Colin Sullivan <Colin.Sullivan@food.gov.uk>; Christopher Hitchen <Chris.Hitchen@food.gov.uk>

Cc: Julie Pierce <Julie.Pierce@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>; Maria Jennings <maria.jennings@food.gov.uk>; Michael Wight <Michael.Wight@food.gov.uk>; [Sect 40]

Subject: Update on blockchain pilot - CCIR

All,

We have been running the pilot in live for 2 weeks now. [Sect 40] has not identified any data discrepancies and today we spent a few minutes looking at additional insight (over K2) for yesterday's data. I thought I would share the findings:

- 114 animals slaughtered – no animal with more than one data entry
- 8 farms had fluke and would not necessarily be aware (there were 5 that also had fluke where this would be reported back under the existing system).

- 2 farms in common for the two animals with liver abscess – certainly the farmer that was not the last owner and keeper would not be aware
- 8 animals contaminated at the abattoir

We are quantifying the time that double data entry took and cost (with help from Richard Collier).

This proof of pilot phase is now complete. We would like to do some further work on dashboards and rollout to more Dunbia plants (there request, but keen to prove scalability) [Out of Scope] and to develop the farmer interface (Dunbia would not put us in touch with farmers). We have been engaging with AHDB and plan to present to Defra (but I am also sending them updates).

If any of your want additional info please ask. We are hoping to work with Simon and Martin to develop Agency dashboards to present the type of information I reported here visually. Also to ensure that we are alerted to more serious issues.

Have a good weekend all

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
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36 Re IBM blockchain pilot and BMPA conf

From: Jason Feeney
Sent: 06 June 2018 10:35
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Cc: Julie Pierce <Julie.Pierce@food.gov.uk>
Subject: Re: IBM blockchain pilot and BMPA conf

Thanks Sian for the heads up.

Jason

On 6 June 2018 at 10:11:27 BST, Sian Thomas <Sian.Thomas@food.gov.uk> wrote:

Yesterday IBM were invited by BMPA to present the blockchain (distributed ledger technology) pilot and accepted. [Sect 40] is going to accompany them.

If this is before your piece you might be asked about it. Let me know if you need any briefing.

Thanks

Sian

Sent from VMware Boxer

42 Contribution to Jason's Board update

From: Julie Pierce

Sent: 04 June 2018 12:32

To: [Sect 40]

Cc: Jason Feeney <jason.feeney@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: Contribution to Jason's Board update

Dear [Sect 40],

I think that the recent request for a paragraph for Jason's Board update came from you (please pass on to the commissioner if it wasn't). My contribution follows:

Distributed Ledger Technology (Blockchain)

In December the FSA convened a self-selected group of Distributed Ledger Technology (DLT) experts from government, food sector, technology industry and academia, to join-up disparate work in the area of food. In the spring, we commissioned a DLT pilot to determine whether and how this technology could add value. The pilot explored communication of inspection results of meat at

slaughter. The pilot, delivered by IBM, has been live for 2 months. Data uploaded from the abattoir information management system that meets a data standard set by the Agency and developed collaboratively with the meat industry is made available to those with an interest using a permissioned ledger.

The success of our small and simple pilot, in such a short timeframe, is in part due to our previous investment in developing the data standards. While work on data standards often goes unnoticed, it affords the opportunity for effective development of innovative technology, not only by governments but also by others. We continue to work to develop the standards, and continue to define the role of the FSA in regard to standards creation and governance.

Best regards

Julie Pierce

Director of Openness, Data and Digital

Food Standards Agency

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London

SW1H 9EX

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M +44 (0) 7786 110 373

@foodgov

@juliepierce77

51 RE Update on blockchain project and future activity

From: [Sect 40]

Sent: 22 May 2018 17:38

To: Ramon Romero <Ramon.Romero@food.gov.uk>

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: Update on blockchain project and future activity

Dear Ramon,

First of all thank you very much for attending today's meeting. Your input is fundamental and it's really appreciated.

Secondly I do apologize for the format of the inspection results slides ('Blockchain 22 05 18' file) done right before the meeting. It was just a quick and brief collection and analysis of some batch inspection results recorded on a few csv files – I've attached an example.

Any further clarifications you need please don't hesitate to contact me.

Kind regards,

[Sect 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: [Sect 40]

Sent: 22 May 2018 15:13

To: [Sect 40]; > Martin Evans <Martin.Evans@food.gov.uk>; Sian Thomas

<Sian.Thomas@food.gov.uk>; [Sect 40]; > Ramon Romero

<Ramon.Romero@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>;

[Sect 40] >

Subject: RE: Update on blockchain project and future activity

Dear all,

Please find enclosed the documents for today's meeting.

[Sect 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

-----Original Appointment-----

From: [Sect 40];

Sent: 16 May 2018 16:21

To: [Sect 40]; Martin Evans; Sian Thomas; [Sect 40]; [Sect 40]; Ramon Romero; Simon Dawson; [Sect 40]; [Sect 40]

Subject: Update on blockchain project and future activity

When: 22 May 2018 15:30-17:00 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.

Where: [Section 31(1)(a)]

52 RE Update on blockchain project and future activity

From: [Sect 40]

Sent: 22 May 2018 15:13

To: [Sect 40] Martin Evans <Martin.Evans@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40] >; Ramon Romero <Ramon.Romero@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>; [Sect 40] >

Subject: RE: Update on blockchain project and future activity

Dear all,

Please find enclosed the documents for today's meeting.

[Sect 40]

Science Evidence and Research Division

FOI 2250 -Information

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

-----Original Appointment-----

From: [Sect 40]

Sent: 16 May 2018 16:21

To: [Section 40]; Martin Evans; Sian Thomas; [Sect 40]; [Sect 40]; Ramon Romero; Simon Dawson; [Sect 40]; [Sect 40]

Subject: Update on blockchain project and future activity

When: 22 May 2018 15:30-17:00 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.

Where: [Section 31(1)(a)]

53 RE Update on blockchain pilot – CCIR

From: Jason Feeney

Sent: 20 May 2018 20:23

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: Update on blockchain pilot - CCIR

Really interesting Sian – look forward to hearing more in due course.

Great work.

Jason

From: Sian Thomas

Sent: 14 May 2018 09:05

To: Jason Feeney <jason.feeney@food.gov.uk>; Nina Purcell <Nina.Purcell@food.gov.uk>; Colin Sullivan <Colin.Sullivan@food.gov.uk>; Christopher Hitchen <Chris.Hitchen@food.gov.uk>

Cc: Julie Pierce <Julie.Pierce@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>; Maria Jennings <maria.jennings@food.gov.uk>; Michael Wight <Michael.Wight@food.gov.uk>; [Sect 40] >

Subject: Update on blockchain pilot - CCIR

All,

We have been running the pilot in live for 2 weeks now. [Sect 40] has not identified any data discrepancies and today we spent a few minutes looking at additional insight (over K2) for yesterday's data. I thought I would share the findings:

- 114 animals slaughtered – no animal with more than one data entry
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If any of your want additional info please ask. We are hoping to work with Simon and Martin to develop Agency dashboards to present the type of information I reported here visually. Also to ensure that we are alerted to more serious issues.

Have a good weekend all

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
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54 RE Blockchain POC

From: Sian Thomas
Sent: 17 May 2018 17:43
To: Leigh Sharpington <Leigh.Sharpington@food.gov.uk>
Subject: RE: Blockchain POC

Good call – and yes, it is good to be associated with things that work! Although the internal politics around DLT is horrible!

Are you at SLT? After that might be good?

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Leigh Sharpington
Sent: 17 May 2018 17:31
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: RE: Blockchain POC

Hiya

Ooh you're Uber efficient! I shall read properly in a bit - on a bigger screen.

The Canadian colleague is writing a paper on regulatory reform - within Canada, and internationally. I know he'll be very very interested in this work. I'll discuss with him and perhaps provide some text for possible inclusion- you'd have sign off. But could be good for all parties...

Let's look for a time week after [Sect 40]

On 17 May 2018 at 17:23:42 BST, Sian Thomas <Sian.Thomas@food.gov.uk> wrote:

Hi Leigh,

Spent an interesting hour with Nina yesterday – and another one today getting the stuff we agreed to do started. All good I think.

[Sect 40]

We are working on the data story for the DLT pilot – but here is a summary and a couple of pictures in support. If it would be helpful for us to share this with RoF we would be happy to (although I know that [Sect 40] is not keen!).

Blockchain Pilot

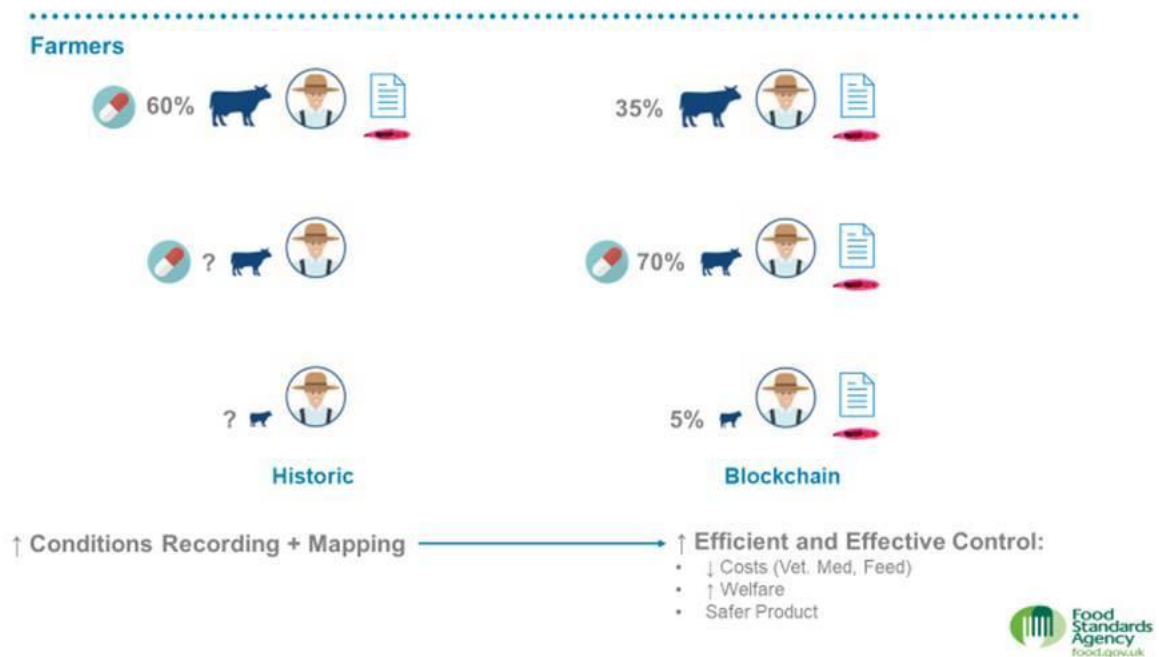
At the start of the year the Department for the Environment, Food and Rural Affairs developed a blockchain PoC with IBM. At a workshop about the PoC there was a view that one of the ‘pain points’ was the process by which the FSA provides information about conditions at post-slaughter inspection back to the farmer (CCIR). Having recently visited an abattoir and understanding that the data in the Food Business Operator system was much better (quality and much more granular) than FSA data, we developed a PoC which provided the results of the inspection not just to the last farmer but also to all of the other farmers that owned that animal. It uses the eartag and information from the animal passport to do this.

The Meat Inspectors enter data about conditions into the FBO system, these are batch uploaded to the blockchain by the vet once the data has been approved. The vet, FSA, FBO and farmer can access the data. We are starting to develop dashboards for data visualisation and once this is done are hopeful that the industry will adopt this (or a similar equivalent) system or systems.

We have been running in live for 5 weeks now. There has been a good data match between this blockchain data and our historical data collection system. So we switched off the old system for the pilot plant last week. [Out of scope]

The system uses Lynx hyperledger as a fabric and because it was commissioned through a government framework contract the code etc should be available for others to copy / use.

As to the business benefit – we have been quantifying the time saving – an average of 10 minutes per day for the initial plant. We expect this to be replicated in other plants (with the potential for greater savings in less efficient plants). But we are also able to see where conditions originated (common farms etc) – the following image shows some of the greater insight the solution affords:



When the data story is completed I will share that too! Our bit, in isolation has the value described above. For traceability and to maximise value there is the possibility of having data on the blockchain about the animal from its birth through its lifecycle. The visualisation of that is in the attachment – it was worked up with the Defra PoC. You can see that we have focussed where we have responsibility!

Hope this is OK and pleased to tell someone about it.

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Leigh Sharpington
Sent: 17 May 2018 16:54
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: Blockchain POC

Hi Sian

Hope all's well with you.

I was speaking to a colleague working with the Canadian government earlier today. We were catching up on our respective change programmes etc.

During discussion I mentioned how we had been looking at DLT, exploring how it may be helpful in terms of traceability, provenance etc.

If possible I'd like to share more information on the recent POC: an outline of objectives, what the FSA did, what we found, next steps. That kinda thing.

Is there a report from the POC that I could share? Or failing that, something I could cull from? I think it a genuinely exciting area, but I want to represent what you've been doing accurately.

Does that sound ok?

Thanks

Leigh

55 RE Blockchain POC

From: Sian Thomas

Sent: 17 May 2018 17:24

To: Leigh Sharpington <Leigh.Sharpington@food.gov.uk>

Subject: RE: Blockchain POC

Hi Leigh,

Spent an interesting hour with Nina yesterday – and another one today getting the stuff we agreed to do started. All good I think.

[Section 40]

We are working on the data story for the DLT pilot – but here is a summary and a couple of pictures in support. If it would be helpful for us to share this with RoF we would be happy to (although I know that [Sect 40] is not keen!).

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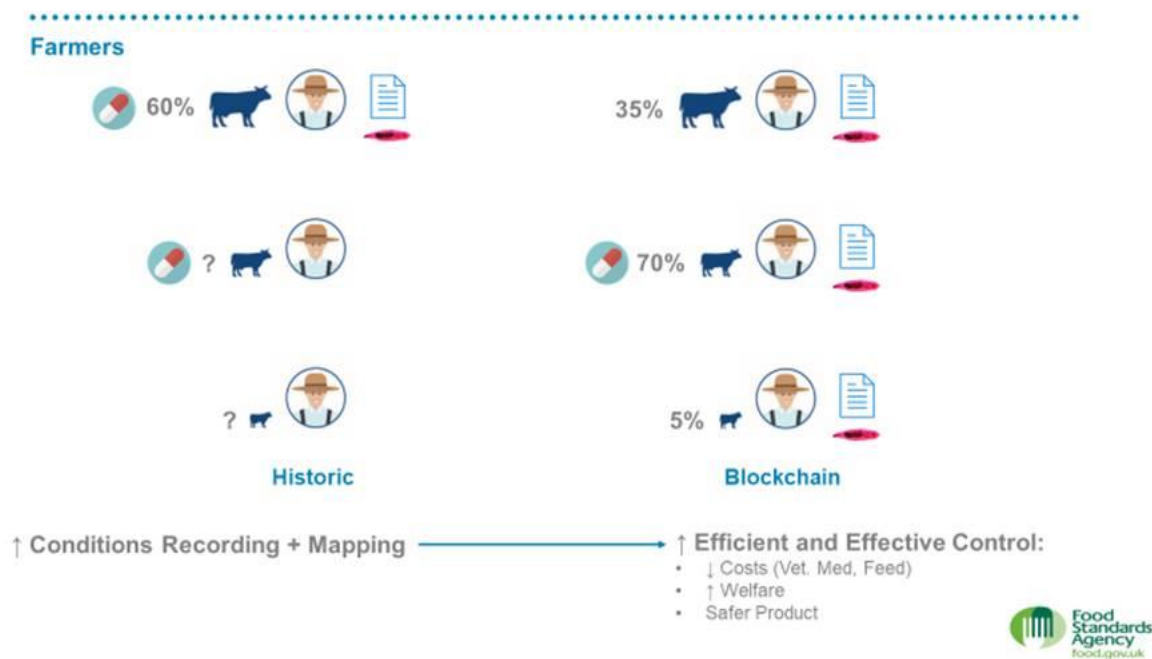
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The system uses Linux hyperledger as a fabric and because it was commissioned through a government framework contract the code etc should be available for others to copy / use.

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Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Leigh Sharpington
Sent: 17 May 2018 16:54
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Subject: Blockchain POC

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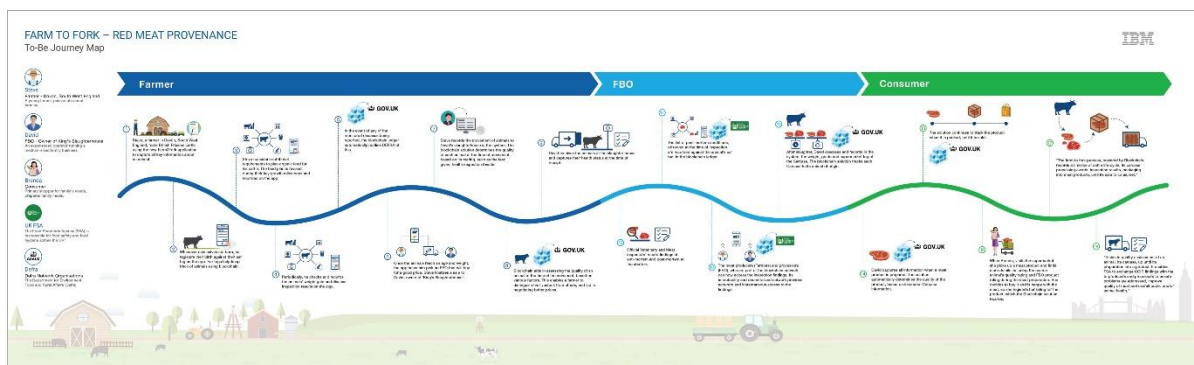
If possible I'd like to share more information on the recent POC: an outline of objectives, what the FSA did, what we found, next steps. That kinda thing.

Is there a report from the POC that I could share? Or failing that, something I could cull from? I think it a genuinely exciting area, but I want to represent what you've been doing accurately.

Does that sound ok?

Thanks

Leigh



56 RE Update on blockchain pilot – CCIR

From: Colin Sullivan
Sent: 14 May 2018 09:29
To: Sian Thomas <Sian.Thomas@food.gov.uk>
Cc: Martin Evans <Martin.Evans@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>; Julie Pierce <Julie.Pierce@food.gov.uk>
Subject: RE: Update on blockchain pilot - CCIR

Sian

This is great work and I am really pleased to see the progress that is being made - and yes in a few weeks' time when things have settled a bit – it would be really great to get a more detailed update on progress.

Colin

Dr Colin Sullivan, Chief Operating Officer

Food Standards Agency | Clive House | 70 Petty France | London | SW1H 9EX

e: Colin.Sullivan@food.gov.uk m: 07977 818 414 t: 028 9041 7718

From: Sian Thomas
Sent: 14 May 2018 09:05
To: Jason Feeney <jason.feeney@food.gov.uk>; Nina Purcell <Nina.Purcell@food.gov.uk>; Colin Sullivan <Colin.Sullivan@food.gov.uk>; Christopher Hitchen <Chris.Hitchen@food.gov.uk>
Cc: Julie Pierce <Julie.Pierce@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>; Maria Jennings <maria.jennings@food.gov.uk>; Michael Wight <Michael.Wight@food.gov.uk>; [Sect 40]
Subject: Update on blockchain pilot - CCIR

All,

We have been running the pilot in live for 2 weeks now. [Sect 40] has not identified any data discrepancies and today we spent a few minutes looking at additional insight (over K2) for yesterday's data. I thought I would share the findings:

- 114 animals slaughtered – no animal with more than one data entry
- 8 farms had fluke and would not necessarily be aware (there were 5 that also had fluke where this would be reported back under the existing system).
- 2 farms in common for the two animals with liver abscess – certainly the farmer that was not the last owner and keeper would not be aware
- 8 animals contaminated at the abattoir

We are quantifying the time that double data entry took and cost (with help from Richard Collier).

This proof of pilot phase is now complete. We would like to do some further work on dashboards and rollout to more Dunbia plants (there request, but keen to prove scalability) [Out of Scope] and to develop the farmer interface (Dunbia would not put us in touch with farmers). We have been engaging with AHDB and plan to present to Defra (but I am also sending them updates).

If any of your want additional info please ask. We are hoping to work with Simon and Martin to develop Agency dashboards to present the type of information I reported here visually. Also to ensure that we are alerted to more serious issues.

Have a good weekend all

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

57 RE Update on blockchain project and future activity

From: Julie Pierce
Sent: 11 May 2018 16:27
To: Simon Dawson <Simon.Dawson@food.gov.uk>; Sian Thomas <Sian.Thomas@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>
Cc: <Sect 40>
Subject: RE: Update on blockchain project and future activity

Many thanks Simon for your kind words. And to everyone for making the progress we can see here.

Best regards

Julie

From: Simon Dawson
Sent: 11 May 2018 15:53
To: Sian Thomas <Sian.Thomas@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>
Cc: Julie Pierce <Julie.Pierce@food.gov.uk>; <Sect 40>
Subject: RE: Update on blockchain project and future activity

Hi Sian

Your blockchain updates are without doubt one of the highlights of my week and progress continues to look fantastic. Rest assured that if we had a strategy then this pilot would align with it as it aligns entirely with our principles of optimising transparency and cost effective utilisation of data to drive more cost effective delivery of official controls, whilst discharging our legal obligation to provide carcass information to producers.

Sorry we can't make the dashboard meeting and agree a workshop would be useful. Might be better if [Sect 40] does it as [Sect 40] won't be in again now until Tuesday,

Thanks again for the great progress and have a great weekend,

Best wishes

Simon

Simon Dawson

Head of Operations Assurance

Food Standards Agency | 6th Floor | Clive House | 70 Petty France | London | SW1H 9EX

e: simon.dawson@foodstandards.gsi.gov.uk t: 0207 276 8360 mobile: 07879 447288

From: Sian Thomas

Sent: 11 May 2018 15:33

To: Martin Evans <Martin.Evans@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>

Cc: Julie Pierce <Julie.Pierce@food.gov.uk>; <Sect 40>

Subject: Update on blockchain project and future activity

Hi Both,

I thought you would want an update – and that I should update you before sending some notes to EMT.

It is all going well – we have been running in live with Dawn (now Dunbia) for two and a bit weeks and <Sect 40> has been checking data – we have not identified any issues. We also have a couple of weeks data about time taken to input data to K2 – on average 10 minutes but ranging from less than 5 to over 20. Richard Collier is going to cost this so that we can estimate the saving in the two week trial.

And attached is a picture of the additional insight we got from the new data collection (yesterday data).

I was a bit concerned about the thread Simon copied me into (<Sect 40> and APHA data sharing / MoU yesterday). I was not aware that this pilot was not aligned with your strategy. And we need to decide what now / next and further investment. I think we have proved that this can work. But we do not want to run the system in the longer term – we just need a view of the data [Out of Scope].

We invited you both to a dashboard meeting – and both have declined I think for independent reasons. However, we think that it is probably best to re-schedule as

running this workshop without your input means that we will not understand your needs from the dashboard. I wonder whether you could get [Section 40] or [Section 40] to look for an alternative slot.

If you want to discuss do let me know, particularly if there are any issues or you do not want to pursue this initiative any further as we need to work out where we go next and how we will support this sooner rather than later. It may be that our approach to develop a system that others can operationalise is sufficient – but we need to be clear about this and particularly the comms.

Thanks and have a good weekend both

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

58 Update on blockchain project and future activity

From: Sian Thomas

Sent: 11 May 2018 15:33

To: Martin Evans <Martin.Evans@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>

Cc: Julie Pierce <Julie.Pierce@food.gov.uk>; <Sect 40>

Subject: Update on blockchain project and future activity

Hi Both,

I thought you would want an update – and that I should update you before sending some notes to EMT.

It is all going well – we have been running in live with Dawn (now Dunbia) for two and a bit weeks and <Sect 40> has been checking data – we have not identified any issues. We also have a couple of weeks data about time taken to input data to K2 – on average 10 minutes but ranging from less than 5 to over 20. Richard Collier is going to cost this so that we can estimate the saving in the two week trial.

And attached is a picture of the additional insight we got from the new data collection (yesterday data).

I was a bit concerned about the thread Simon copied me into (<Sect 40> and APHA data sharing / MoU yesterday). I was not aware that this pilot was not aligned with your strategy. And we need to decide what now / next and further investment. I think we have proved that this can work. But we do not want to run the system in the longer term – we just need a view of the data. [Out of Scope].

We invited you both to a dashboard meeting – and both have declined I think for independent reasons. However, we think that it is probably best to re-schedule as running this workshop without your input means that we will not understand your needs from the dashboard. I wonder whether you could get [Section 40] or [Section 40] to look for an alternative slot.

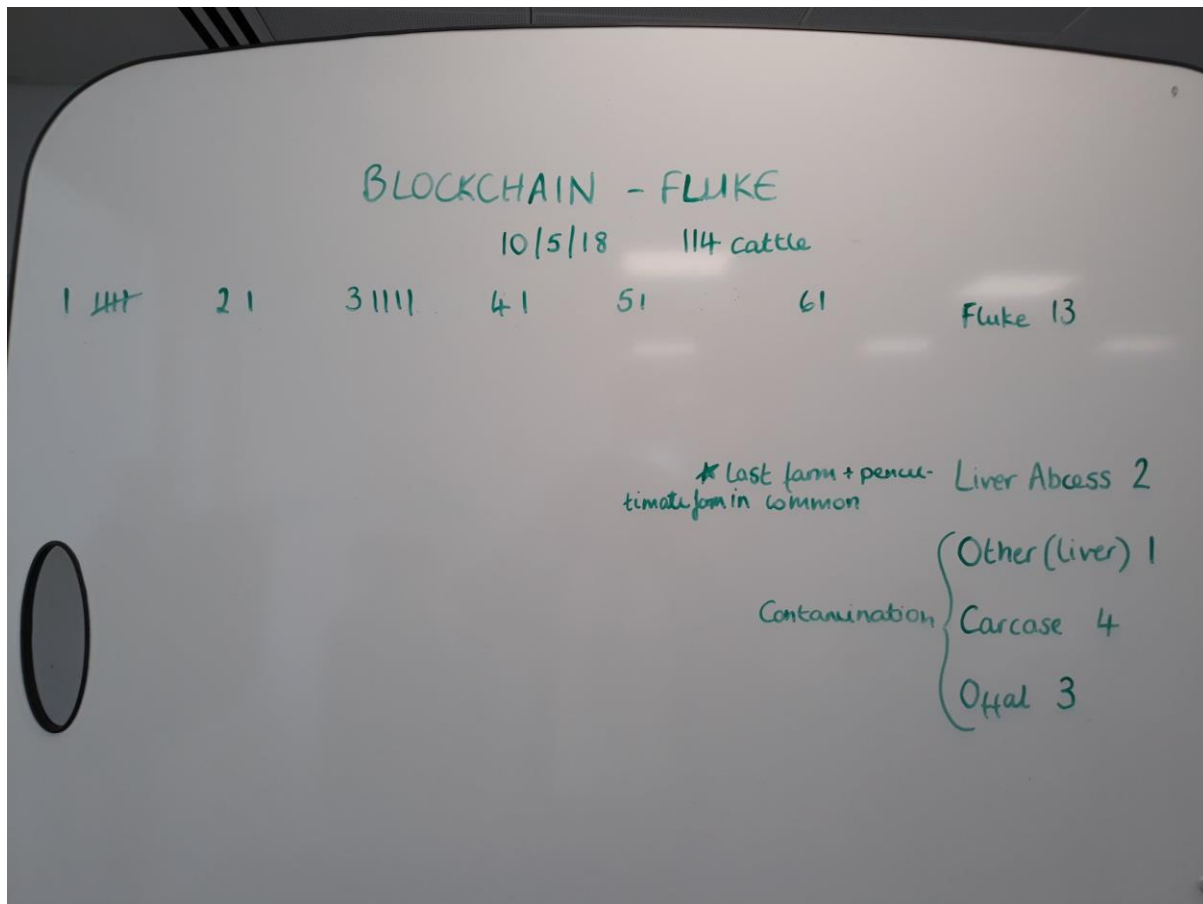
If you want to discuss do let me know, particularly if there are any issues or you do not want to pursue this initiative any further as we need to work out where we go next and how we will support this sooner rather than later. It may be that our approach to develop a system that others can operationalise is sufficient – but we need to be clear about this and particularly the comms.

Thanks and have a good weekend both

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
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60 Blockchain update

From: Sian Thomas
Sent: 11 May 2018 15:02
To: Julie Pierce <Julie.Pierce@food.gov.uk>
Subject: Blockchain update

[Out of Scope]

On a more positive note, the pilot is going well and we have matched data through K2 and on the blockchain for the plant. We also just did an exercise about additional insight from yesterdays data. And learned that 8 plants would know that cattle that were on their farms had fluke that would not previously have known and also that there were liver abscesses in two animals with two farms in common. I have a picture which I will send. I will also send a note to EMT and something to martin and Simon to check they are content with progress and whether they have any money to support the next stage.

Thanks

S

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

66 RE Update on Blockchain and CCIR pilot

From: Colin Sullivan

Sent: 27 April 2018 15:59

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Cc: Maria Jennings <maria.jennings@food.gov.uk>; Michael Wight
<Michael.Wight@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>;
Martin Evans <Martin.Evans@food.gov.uk>; [Sect 40]; Knight, Steven
<Steven.Knight@food.gov.uk>; Julie Pierce <Julie.Pierce@food.gov.uk>; Jason
Feeney <jason.feeney@food.gov.uk>; Christopher Hitchen
<Chris.Hitchen@food.gov.uk>; Nina Purcell <Nina.Purcell@food.gov.uk>

Subject: RE: Update on Blockchain and CCIR pilot

Sian

Thanks for the update – good progress being made.

Colin

Dr Colin Sullivan, Chief Operating Officer

Food Standards Agency | Clive House | 70 Petty France | London | SW1H 9EX

e: Colin.Sullivan@food.gov.uk m: 07977 818 414 t: 028 9041 7718

From: Sian Thomas

Sent: 27 April 2018 14:57

To: Julie Pierce <Julie.Pierce@food.gov.uk>; Jason Feeney <jason.feeney@food.gov.uk>; Christopher Hitchen <Chris.Hitchen@food.gov.uk>; Nina Purcell <Nina.Purcell@food.gov.uk>; Colin Sullivan <Colin.Sullivan@food.gov.uk>

Cc: Maria Jennings <maria.jennings@food.gov.uk>; Michael Wight <Michael.Wight@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>; [Sect 40]; >; Knight, Steven <Steven.Knight@food.gov.uk>

Subject: Update on Blockchain and CCIR pilot

All,

I am delighted to report that success is continuing in the pilot. This week we tested the new data upload process in the pilot environment and achieved a full match with the data in K2. Following confirmation of this over a number of days, we transitioned to live running from yesterday. There have been no process issues and feedback to IBM has been around the way that the visualisations appear on data upload. In addition to the live running, we have requested that a record is kept of who uploads the K2 data and how long this takes whilst we are dual-running. This is so that we have accurate and current information about time-saving for when we build the business case.

Our plans for the next few days include continuing with the dual data entry next week, and subject to no issues being identified transitioning to holding data only on the blockchain for the week commencing 6/5/2018 [Out of Scope].

The final phase of the technical work is to commission an alternative supplier to build a matched chain to demonstrate interoperability. This was included in the original case.

We also need to work through the business model to ensure that the solution is sustainable in the longer term. We have never envisaged that this is something the FSA own – our investment in the space is to show FBOs that they can use the technology to provide the data that we need, to standards that we have set whilst generating additional benefits across the supply chain. The significant next phase is to get MI providers to FBOs to take this up as part of their standard packages.

I hope this all makes sense, if not please do come back with questions. And have a good weekend when you get there.

Best wishes

Sian

Head of Information Management, Food Standards Agency

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69 RE Board Thursday mailout

From: Sian Thomas

Sent: 26 April 2018 14:16

To: Board.Sec <board.sec@food.gov.uk>; <Sect 40>

Subject: RE: Board Thursday mailout

Amended because we will not want to be sending more and more stuff. Hope that is OK. Thanks

We have developed, with IBM, a pilot of recording Collection and Communication of Inspection Results (for cows) on a blockchain. The functional testing phase finished on Wednesday. Yesterday we were able to successfully show equivalence between the blockchain data and the historical means of data collection – data upload to the blockchain was recorded and the demo video will be available soon. We have scheduled go live at the test slaughterhouse (Dawn Carnaby). From today all the Inspection Results will be uploaded and stored into the blockchain in this new environment. Rollout to other plants should commence next week.

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Board.Sec

Sent: 26 April 2018 13:12

To: <Sect 40>; Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: Board Thursday mailout

Importance: High

Hi Sian,

Are you content for this to go into the Board Circulation for this week.

A prompt reply would be most helpful as we envisaged to send out the circulation very shortly.

Kind regards



[Sect 40]

Private Office

Food Standards Agency

Tel: [Sect 40]

Mob: [Sect 40]

Board.Sec@food.gov.uk

From: <[Sect 40]>

Sent: 26 April 2018 13:08

To: Sian Thomas <Sian.Thomas@food.gov.uk>; Board.Sec
<board.sec@food.gov.uk>

Subject: RE: Board Thursday mailout

Dear Sian and [Sect 40] ,

[Section 43] The development phase finished this Wednesday and yesterday we were able to successfully test the pilot environment – this session was recorded and the demo video should be available soon. We are now ready to go live at the slaughterhouse level (Dawn Carnaby) – I've forwards the interface log in details (for both FBO and OV at the plant) – so from today all the Inspection Results will be uploaded and stored into this new environment. This should take another week before we roll out.

FOI 2250 -Information

Best regards,

<Sect 40>

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: <Sect 40> **M:** <Sect 40> **E:** <Sect 40>

From: Sian Thomas

Sent: 23 April 2018 12:43

To: Board.Sec <board.sec@food.gov.uk>

Cc: <Sect 40>

Subject: Board Thursday mailout

Hi,

We are planning to include something on our blockchain pilot for the board for Thursday. It would be very helpful if you could send a good example for us to refer to.

Thanks

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

73 IBM and blockchain

From: Sian Thomas
Sent: 25 April 2018 10:01
To: Knight, Steven <Steven.Knight@food.gov.uk>; <Sect 40>
Subject: IBM and blockchain

Hi Both,

[Out of scope]

However, as Defra are not engaging and not supporting the front end work at the moment it is important that we continue to work with them until we accrue enough benefits to make the model self-sustaining. I think the Defra thing might resolve soon as I saw that they have funded an extension to their contract with IBM on twitter last night.

Hope this makes sense. Sect 40 can go through what is planned with you – but at the highest level there will be dual entry this week (historical until today and hopefully daily – which will be our live – from tomorrow). Next week we will continue to check if it works.

[Out of Scope]

Hope it all makes sense – <Sect 40>

Thanks

sian

Head of Information Management, Food Standards Agency
Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

74 RE CCIR Blockchain Pilot – Update

From: Sian Thomas
Sent: 23 April 2018 14:07
To: [Sect 40] Martin Evans <Martin.Evans@food.gov.uk>
Cc: [Sect 40]
Subject: RE: CCIR Blockchain Pilot - Update

Martin,

This is in relation to getting ops staff (MHIs) at the Dawn pilot plant to collect some data about how much time they spend inputting IRIS data. This is likely to be the last week that they need to do the data input and I am keen to get accurate data so we can calculate efficiency gains / cost savings. I suggested we send them a table to record this in but [Sect 40] had some concerns so we thought you might be able to help with how best to get data we are confident in the accuracy of, which does not set any hares running.

Thanks for your help with this – obviously, the earlier in the week we get your input the better (so we can collect a few extra days data!). It is only at Dawn at this stage, but we will probably want to do something similar at the next few plants to refine our narrative around benefits.

Best wishes

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]

Sent: 23 April 2018 14:01

To: Martin Evans <Martin.Evans@food.gov.uk>

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40]

Subject: CCIR Blockchain Pilot - Update

Dear Martin,

I would like to request your availability for a ½ hour meeting (CH, or through TC) this Tuesday or Wednesday, with Sian and myself, so we can provide some new updates and discuss some Ops. related topics.

Thank you very much for your attention.

Kind regards,

[Sect 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

75 EXTRACT OF BOARD CIRCULATION DATED WEDNESDAY 25 APRIL 2018

BOARD CIRCULATION:

THE DEVELOPMENT PHASE OF THE FSA CCIR BLOCKCHAIN PILOT-PROJECT HAS FINISHED AND THE TESTING PHASE AT SLAUGHTERHOUSE LEVEL HAS KICKED-OFF OFFICIALLY ON WEDNESDAY 25/04/2018. IT'S EXPECTED TO RUN THROUGH X WEEKS AND TO BE EXPANDED TO OTHER DAWN MEAT SLAUGHTERHOUSES (5 EXCEPT 1 USING A DIFFERENT SOFTWARE PROVIDER).

CRANSWICK IN ASSOCIATION WITH VERIS STRATEGIES (WITH THE PARTICIPATION OF PROF. ELLIOTT) HAVE PUBLISHED, ON THE 13TH OF APRIL, A REPORT CALLED '**RADICAL TRANSPARENCY: THE RISE OF DISRUPTIVE CONSUMERISM**' CALLING FOR THE URGENT NEED FOR A BETTER AND MORE TRANSPARENT TRACEABILITY SYSTEMS ACROSS THE FOOD SUPPLY CHAIN, HAVING AS MAIN TARGET IMPROVING AND RAISE CONSUMERS' CONFIDENCE AFTER RECENT FOOD SCANDALS WIDE SPREAD IN THE MEDIA. WITH A SECTION OF THIS DOCUMENT IT'S MENTIONED AND DESCRIBED THE ADVANTAGES OF DLT SYSTEM AS A SOLUTION TO ACHIEVE THE MENTIONED TARGETS.

THIS REPORT RELEASE COMES AFTER SEVERAL DLT PUBLICATIONS MADE BY GOVERNMENT AND THE HOUSE OF LORDS HIGHLIGHTING ITS FEATURES AND ADOPTION BENEFITS ACROSS

DIFFERENT SOCIETY SECTORS AND PUBLIC DEPARTMENTS (FINANCE, HEALTH, FOOD, AUTOMOTIVE, ETC).

ANOTHER ONE (OTHER THAN MATT HANCOCK SPEECH):

ON THE 19TH OF APRIL, MATT HANCOCK (Secretary of State for Culture, Media and Sport) ACKNOWLEDGED AT THE LONDON BLOCKCHAIN CONFERENCE THAT 'BLOCKCHAIN TECHNOLOGY HOLDS REAL POTENTIAL TO MAKE GOVERNMENT SERVICES MORE EFFICIENT (...) HELP TO SOLVE SOME OF THE GREAT GLOBAL SOCIAL CHALLENGES OF OUR TIME'. HE ALSO REINFORCED THE NEED TO INTEGRATE THE 'SMART CONTRACT' CONCEPT WITH AN ADEQUATE REGULATORY FRAMEWORK AND INTERPRETATION WHILST BLOCKCHAIN 'IS STILL VERY MUCH IN ITS DEVELOPMENT PHASE'.

<https://www.gov.uk/government/speeches/matt-hancock-speaking-at-the-london-blockchain-conference>

79 Friday update - blockchain for CCIR pilot

From: Sian Thomas

Sent: 20 April 2018 16:28

To: Julie Pierce <Julie.Pierce@food.gov.uk>; Colin Sullivan <Colin.Sullivan@food.gov.uk>; Christopher Hitchen <Chris.Hitchen@food.gov.uk>; Nina Purcell <Nina.Purcell@food.gov.uk>

Cc: Jason Feeney <jason.feeney@food.gov.uk>; Rod Ainsworth <Rod.Ainsworth@food.gov.uk>; Michael Wight <Michael.Wight@food.gov.uk>; Maria Jennings <maria.jennings@food.gov.uk>; Knight, Steven <Steven.Knight@food.gov.uk>; **Sect 40>**; Data <Data@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>; Simon Dawson <Simon.Dawson@food.gov.uk>

Subject: Friday update - blockchain for CCIR pilot

All,

Following the presentation last week I committed to provide an update on the initiative today.

You heard from Julie about our go live in the cloud yesterday. Today **Sect 40>** turned his attention to getting prepared for regular data upload from Monday. You will be aware that this is in an FSA instance of hyperledger in the IBM cloud. As such we are the administrators of the pilot system. Today **Sect 40>** has set up the first set of users to enable us to begin live use on Monday. This includes the test plant, the vet in the plant and ourselves.

On Monday morning we will be working with IBM to show the FBO and the vet in plant the process of upload and validation of the files using yesterday and today's data. We will check this against data in IRIS, and then from Monday transition to the blockchain for data management of CCIR. **Sect 40** is leading comms with Operations colleagues to ensure that all involved with meat inspection at the pilot plant are aware of the implications (no data entry to IRIS and the vet authorising data upload to the blockchain).

If there are any problems we will let you know, otherwise I will provide an update on Friday of the first week live data in the pilot.

Thanks

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
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80 RE Blockchain

From: Colin Sullivan

Sent: 19 April 2018 20:23

To: Julie Pierce <Julie.Pierce@food.gov.uk>

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; **Sect 40**; EMT <EMT@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>

Subject: RE: Blockchain

Julie

Really good start.

Thanks for the update.

Colin

Dr Colin Sullivan, Chief Operating Officer

Food Standards Agency | Clive House | 70 Petty France | London | SW1H 9EX

e: Colin.Sullivan@food.gov.uk m: 07977 818 414 t: 028 9041 7718

FOI 2250 -Information

From: Martin Evans
Sent: 19 April 2018 18:14
To: Julie Pierce <Julie.Pierce@food.gov.uk>; EMT <EMT@food.gov.uk>
Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; **Sect 40**>
Subject: RE: Blockchain

Thanks Julie

Really good to see and I might I add a number of others really keen to join

Martin.

Martin Evans
Head of Field Operations
Food Standards Agency
Mobile 07900 226185
Email martin.evans@food.gov.uk
70 Petty France
London
SW1H 9EX

From: Julie Pierce
Sent: 19 April 2018 18:07
To: EMT <EMT@food.gov.uk>; Martin Evans <Martin.Evans@food.gov.uk>
Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; **Sect 40**>
Subject: Blockchain

Dear Colleagues

The FSA Blockchain PoC went live at 1 plant today. The plan is for the data for Thursday and Friday will be loaded on to the system on Monday and thence, daily.

Guy is to talk at the Innovation and Regulation Conference on 1st May and will include something on this. 3rd countries will be represented in the audience. Along with the BEIS CSA and **Sect 40**.

FOI 2250 -Information

We are pulling together our comms plan for this, both internal and external. This would include some update for the lead from HoL. And I suggest we include Heather and the Board.

Many thanks to Sian and **Sect 40** for driving us to this point.

Best regards

Julie Pierce

Director of Openness, Data and Digital

Food Standards Agency

Floors 6 & 7

Clive House

70 Petty France

London

SW1H 9EX

T +44 (0) 207 276 8023

M +44 (0) 7786 110 373

@foodgov

@juliepierce77

81 RE CCIR Blockchain Pilot Presentation

From: **[Sect 40]**

Sent: 19 April 2018 16:14

To: **[Sect 40]**; Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: CCIR Blockchain Pilot Presentation

Thank you very much for your time, it has been a very interesting presentation, exciting times ahead.

Good luck with the pilot.

Kind regards

[Sect 40]

Operations Assurance Division

Food Standards Agency

Mobile : [Sect 40]

Email[Sect 40]



From: [Sect 40]

Sent: 19 April 2018 11:17

To: [Sect 40]>

Subject: CCIR Blockchain Pilot Presentation

Hi [Sect 40],

Thank you for the invite to present the CCIR Blockchain Pilot.

Please feel free to share the presentations with all the auditors.

Any questions or feedback you can contact me using the details below.

Kind regards,

[Sect 40]

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

83 RE Blockchain Project

From: Sian Thomas
Sent: 17 April 2018 13:59
To: Sect 40>
Cc: Sect 40>
Subject: RE: Blockchain Project

Thanks for the copy. I suggest that we might need to review some of the responses – but happy to wait until a future draft if that is preferable with Sect 40>.

S

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: Sect 40>
Sent: 17 April 2018 13:22
To: Sect 40>
Cc: Sian Thomas <Sian.Thomas@food.gov.uk>
Subject: RE: Blockchain Project

Hi Sect 40>,

Please find the answer from the best of my knowledge.

I'll try to call you today so I can have a clear idea on what this article should look like.

How is data currently collected (if at all)

The Post-mortem inspection findings are inserted into the Hellenic system (FBO software) screen by the meat inspectors working on the line. And at the end of the day the FBO prints and hands a report for the FSA team to duplicate the same information into K2 (IRIS – FSA data base)

With this pilot we want to avoid this duplication of information into IRIS (stop using

IRIS), and enabling the automatic sharing of data using this 'distributed data base'. (information sent, through automatic report generation, to farmers, FBO and FSA).

What made the FSA decide to do this?

Improve transparency across the Food supply chain. FSA saw huge potential on this technology.

Improve the Collection and Communication of the Inspection results (CCIR) back to farmers, as a legal requirement.

It was also integrated after cooperation with DEFRA on the Animal Identification Proof-of-concept project with IBM (company FSA is working with).

First of all to demonstrate the benefits of this technology in terms of fast stream data sharing, transparency principles of open and sharing data, interoperability and real-time data exchange. And provide direct benefits for the participants

Was it expensive/difficult to do? How long did it take?

(Having in mind all public money is 'expensive') We got in a very short period (in 2 months) the development phase of this new environment/cloud, plus interfaces successfully completed and after a live demo we expect to start soon the testing phase (within 1 week). I would say The ratio of funding/product delivered in such short period was quite good.

What is different about this?

FBO's software will upload the information into the Blockchain (after OV's validation) and the platform will automatically generate specific reports for all the parties involved (FBO, FSA and Farmer). Using this system the Collection and Communication of the Inspection results (CCIR) back to the Producers **as a legal requirement** will be improved – not only the last owner of the animal will have access to the information / report but all of them during the animal's lifetime, since its birth to slaughter.

What does it mean for Field Ops staff in terms of their day to day jobs

They won't have to duplicate data on IRIS platform – Time saving and data consistency improvement. OV still be required to validate the information at the end of the day. This only applies those FBO who have deployed an electronic recording systems on the line.

How long is the pilot taking place and where

First pilot in collaboration with Dawn Meats (the abattoir is Dawn Carnaby – East Yorkshire) – duration likely to run for a few months (we don't know exactly) once we take an agile approach and we will need to iterate and make improvements until achieves what.

[Out of scope]

What are the benefits to Farmers, animals, meat inspectors

The aim is not just to communicate the inspection results but also providing ease access to a 'smart report' to Farmers so they can take the most of the information, helping them to improve the status / standards (both animal health and welfare), to take better and more cost effective decisions. Special focus to the Antimicrobial use and resistance – Residues in meat (public health and food safety concerns).

For meat inspectors they won't have the need to duplicate the information, saving them time (save them from paperwork burden, they can be more focused in other duties / checks – animal welfare, animal by products, traceability – and ultimately less time at work).

Best regards,

Sect 40>

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: Sect 40> M: Sect 40> E: Sect 40>

From: Sect 40>

Sent: 17 April 2018 11:05

To: Sect 40>

Subject: RE: Blockchain Project

Hi Sect 40>,

I've made a few initial comments on what you've written.

FOI 2250 -Information

What you've written is great for a scientific audience but I'm afraid it's abet confusing for those not used to that scientific language. Please see my comments. Are you able to make it easier to understand please?

Also are you able to consider and add to the story

How is data currently collected (if at all)

What made the FSA decide to do this?

Was it expensive/difficult to do? How long did it take?

What is different about this?

What does it mean for Field Ops staff in terms of their day to day jobs

How long is the pilot taking place and where

[Out of scope]

[Out of scope]

What are the benefits to Farmers, animals, meat inspectors

Happy to discuss anything.

Many thanks

Sect 40>

Food Standards Agency

Sect 40>

Sect 40>

Sect 40>

Sect 40>

From: Sect 40>

Sent: 17 April 2018 10:49

To: Sect 40>

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; < Sect 40>; < Sect 40>

Subject: RE: Blockchain Project

Yes sure Sect 40>.

Please find enclosed the document for your review.

On the meantime, and due to copyrights, can we have our own FSA Ledger Types Picture based on this one attached?

Thank you.

Best regards,

Sect 40>

Science Evidence and Research Division

Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: Sect 40> **M:** Sect 40> **E:** Sect 40>

From: Sect 40>

Sent: 17 April 2018 10:21

To: Sect 40>

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; Sect 40> >; Sect 40>

Subject: RE: Blockchain Project

Dear Sect 40>,

Thanks for your email. Do you think that you could have a story ready in time to be published on Thursday this week? I'd need time to look at it so I'd need something by close of play tomorrow at the latest?

Let me know if there's anything you'd like to discuss of if you need more time.

Many thanks

Sect 40>Food Standards Agency

Sect 40>)

From: Sect 40>

Sent: 13 April 2018 08:26

To: Sect 40>

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; Sect 40>; Sect 40>

Subject: RE: Blockchain Project

Dear Sect 40>,

Sure I can, more than happy to do it. I am just preparing another blockchain document for Sian, and I can start on that one asap.

Best regards,

Sect 40>

Food Standards Agency

A: Floor 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: Sect 40> **M:** Sect 40> **E:** Sect 40>

From: Sect 40>

Sent: 13 April 2018 00:21

To: Sect 40>

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; Sect 40> >; Sect 40>

Subject: Blockchain Project

Dear Sect 40>,

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I had a meeting with Sian today and she spoke to me about the Blockchain project. I work in Internal Comms and I think it would be good to have a story on Foodweb/Digital Workplace and in Between the Lines as soon as we can about this. After the meeting I contacted Martin Evans who agreed that it was the right timing but he said that in the story, 'he doesn't want anything too technical – just the basics'. As a Vet working on the project, it would be great if you were happy to write

the story (we'll be able to edit it/amend it if necessary – help in any way we can) as you will be more of a trusted voice than those of us that are always office based.

If you are willing, please can you write a story of about 300-400 words covering the reasons behind the project, what the next steps are, what the outcomes of using this will be etc. I don't work Fridays or Mondays but will be working again on Tuesday if you want to discuss anything or want any advice on writing the story.

My colleague **Sect 40** is editor of Between the Lines and she may be in touch separately about an article for Between the Lines.

Many thanks in advance.

Kind regards,

Sect 40

Food Standards Agency

Sect 40

86 RE Blockchain and FSA

From: **[Sect 40]**

Sent: 17 April 2018 10:49

To: **[Sect 40]**

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; **[Sect 40]** >; **[Sect 40]** >

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[Sect 40]

Science Evidence and Research Division
Food Standards Agency

A: Floors 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: [Sect 40]

Sent: 17 April 2018 10:21

To: [Sect 40]

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40] >; [Sect 40] >

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[Sect 40]

Food Standards Agency

[Sect 40]

From: [Sect 40]

Sent: 13 April 2018 08:26

To: [Sect 40] >

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40] >; [Sect 40]

Subject: RE: Blockchain Project

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[Sect 40]

Food Standards Agency

A: Floor 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: [Sect 40]

Sent: 13 April 2018 00:21

To: [Sect 40] >

Cc: Sian Thomas <Sian.Thomas@food.gov.uk>; [Sect 40] >; [Sect 40] >

Subject: Blockchain Project

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Many thanks in advance.

Kind regards,

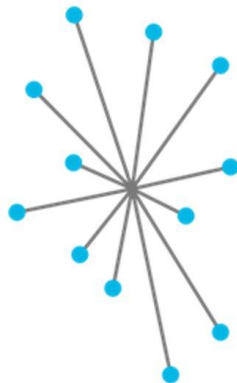
[Sect 40]

[Sect 40]

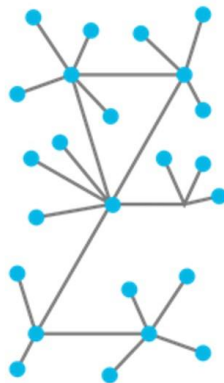
Food Standards Agency

[Sect 40]

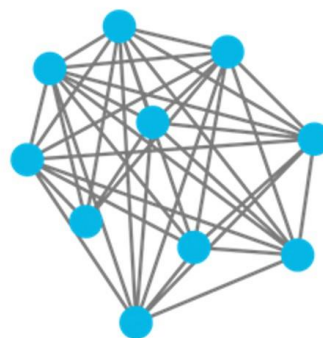
Centralized



Decentralized



Distributed



87 RE Blockchain and FSA

OK – so lets think about that external audience. Who are we targeting to? Techy types who will know about dlt (I think the first sentence assumes some knowledge) or the agricultural community where this is far less certain? Or perhaps we need a couple of versions – a sort of – Do you know about blockchain? Yes, enough – one route; a little – the middle way; no – a basic explanation using ours as an example.

Hope that makes sense.

FOI 2250 -Information

Thanks

sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]

Sent: 13 April 2018 09:46

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: Blockchain and FSA

Following Julie's email, my interpretation was to have a document prepared mainly for external audience, but it could also be adapted to any internal comms.

Yes I'll need your guidance to complete it and I'll go through the links you've sent me. Yes images and the wire frame will definitely help to reach wider audiences.

I'll keep doing some more work on this.

We can discuss the progress during next week – I'll be in the office the whole week.

[Sect 40]

Food Standards Agency

A: Floor 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: Sian Thomas

Sent: 13 April 2018 09:33

To: [Sect 40]

Subject: RE: Blockchain and FSA

Thanks [Sect 40], before I go through in detail could we think about what this is for? Is it for a general audience (e.g. a blog, food.gov piece?) Or is it internal to bring people to where we are with blockchain?

Once we have thought about the purpose, we should work on which audience. Which in turn will help make sure we position it appropriately.

On first glance, I think we should include something about why government thinks blockchain is important (have you seen the Lord Holmes report? I will dig out the link http://chrisholmes.co.uk/wp-content/uploads/2017/11/Distributed-Ledger-Technologies-for-Public-Good_leadership-collaboration-and-innovation.pdf) and how it aligns with our data strategy (link here <https://beta.food.gov.uk/our-data>).

Once we have a purpose and audience I can go through and add some more specific comments. This is a great start but we should include some images. Particularly the long diagram from IBM of the red meat supply chain and also the bit we are most interested in where the abattoirs fit. Indeed, wondering about making that part of the diagram a background for the powerpoint and a resource that we use when we are talking about this so that people start to recognise it even if they don't understand.

Hope this helps

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]

Sent: 13 April 2018 08:59

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: Blockchain and FSA

Hi Sian,

Please find a draft from the text that Julie requested for your review.

We can discuss this later.

Today, I should start building the other that [Sect 40] requested.

Kind regards,

[Sect 40]

FOI 2250 -Information

Food Standards Agency

A: Floor 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

90 RE CCIR Blockchain Demo and Test phase

Just had a call back from [Sect 40]

He wants to have a meeting with us and IBM (preferably next week) so we can provide updates and let him know what are the next steps of the project.

Please let me know what day is better for you, or even if you want to contact him directly here's his contact details:

[Sect 40]

Best regards,

[Sect 40]

Food Standards Agency

A: Floor 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: [Sect 40]

Sent: 05 April 2018 14:32

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: CCIR Blockchain Demo and Test phase

Hi Sian,

I had two TC's with [Sect 40] from IBM yesterday and today. At this point they need to clarify with Dawn Carnaby ([Sect 40]) the place (folder) where they are going to store the .csv file before uploading it into the new interface.

After [Sect 40] request I've contacted Dawn to get [Sect 40] number ([Sect 40] was very helpful) and forwarded to him. During the phone call [Sect 40] told me they haven't heard any updates since the demo presentation (they couldn't attend),

hopefully [Sect 40] will keep them updated. Are they going to be invited to the next demo on the 10th?

[Sect 40] (the 2nd demo's presentation day). But I'll have the laptop with me.

Anything else please let me know.

Best regards,

[Sect 40]

Food Standards Agency

A: Floor 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

91 RE blockchain project march 18 accrual SERD PROJECT85210 FS60101

[Email out of scope]

[Email out of scope]

From: Sian Thomas

Sent: 27 March 2018 15:47

To: [Sect 40]

Subject: RE: March 18 serd manual accruals

Hi [Sect 40]

The CCIR blockchain project – still waiting for a PO but work is progressing well and will be complete by the end of the month. This morning I went to a workshop with IBM and saw the blockchain in action (it was very exciting). I will be able to provide a link to a working version by Thursday as evidence that the work is complete.

As we have not had a PO yet it is unlikely that we will receive an invoice by the end of the month.

Thanks

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

[Email out of scope]

[Attachment out of scope]

94 RE Innovation examples for regulator conference

From: [Sect 40]

Sent: 13 April 2018 13:37

To: Sian Thomas <Sian.Thomas@food.gov.uk>

Subject: RE: Innovation examples for regulator conference

Btw Sian, here is the last update of the presentation for the 19th.

Can you please review and provide your input please?

Thank you

[Sect 40]

Food Standards Agency

A: Floor 6 & 7, Clive House, 70 Petty France, Westminster, London, SW1H 9EX

T: [Sect 40] **M:** [Sect 40] **E:** [Sect 40]

From: Sian Thomas

Sent: 13 April 2018 13:24

To: [Sect 40] > Leigh Sharpington <Leigh.Sharpington@food.gov.uk>; [Sect 40] >
Subject: RE: Innovation examples for regulator conference

[Sect 40],

Thanks for this – it could be the first time we present the blockchain work outside the Agency. And it probably is fitting as it was funded with Guys SEF.

But this means we need a bit more information – specifically, how long has he got and who is the audience? Would he be happy to say some things about the role of the regulator and information governance (including data standards) as I think these are proving to be crucial.

Would he be happy to show the live system in his presentation? Or would he rather we worked up a demo?

Thanks and sorry for all of the questions. Also, the IoT one is fine too – I will dig out the info from these projects and put it into a couple of slides. Perhaps we should start making a slide repository because these could be a good resource going forward.

Thanks

Sian

Head of Information Management, Food Standards Agency

Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

From: [Sect 40]

Sent: 13 April 2018 13:05

To: Sian Thomas <Sian.Thomas@food.gov.uk>; Leigh Sharpington <Leigh.Sharpington@food.gov.uk>; [Sect 40] >

Subject: Innovation examples for regulator conference

Hi All,

Guy has been asked to present at a “regulator conference” over at BEIS on the 1st of May. The event focusses on “the use of regulation to support innovation (including the Industrial Strategy) and protect consumers and how we can harness new and emerging technologies to develop a cutting edge regulation and enforcement regime”. Guy is to provide his CSA perspectives on bringing science into regulation.

Sian- Just wondering what resources I can pull from you with regard to presenting on the internet of things and blockchain ([Sect 40] - believe you pulled together a blockchain demonstration earlier in the week)?

Summarily Leigh- anything you could provide with the role out of registration etc would be much appreciated.

Look forward to hearing from you,

Thanks and Best Regards,

[Sect 40] Floors 6 & 7, Clive House, 70 Petty France, London, SW1H 9EX.

T: [Sect 40]

95 Draft presentation

From: Sian Thomas

Sent: 26 April 2018 15:11

To: [Sect 40]

Cc: Nina Purcell <Nina.Purcell@food.gov.uk>; [Sect 40]

[Sect 40]

Subject: Draft presentation

Hi [Sect 40],

Thanks for this. I have added in a couple of slides for you at the end – we discussed having a ‘what happens if things go wrong’ section. I have not put in a title slide or included a note about this. But I think that it would be good to share the recall / withdrawal API as some of the other regulators do less well in this space and this new service is something we are quite proud of!

I have not been back through the other slides in detail – do you want me to? It did look at bit ‘bitty’ – I would recommend looking at the story through the presentation and checking that we are not trying to do too much. I think that some of the blockchain intro is not necessary – certainly a single slide overview would be more than enough for the audience?

Thanks

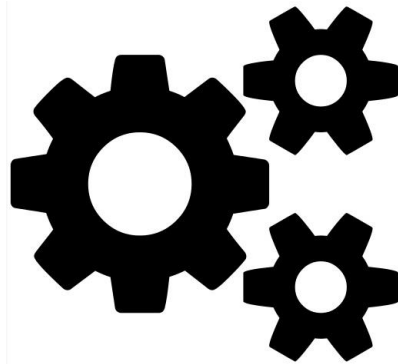
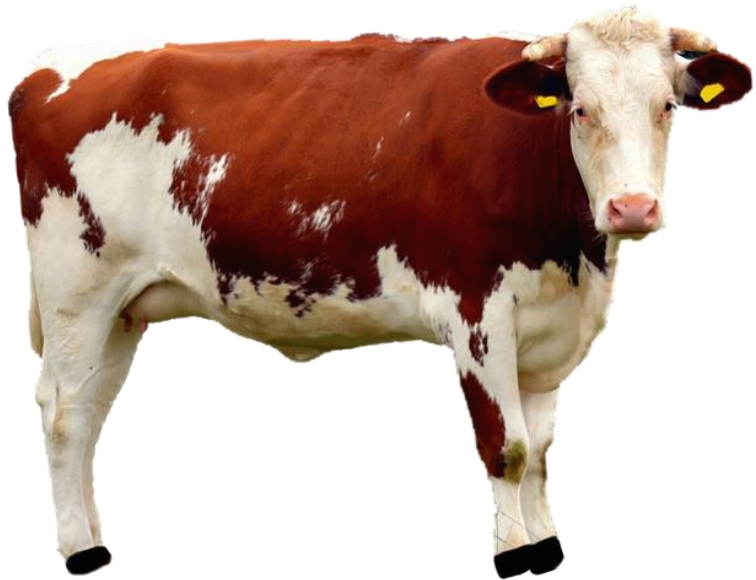
Sian

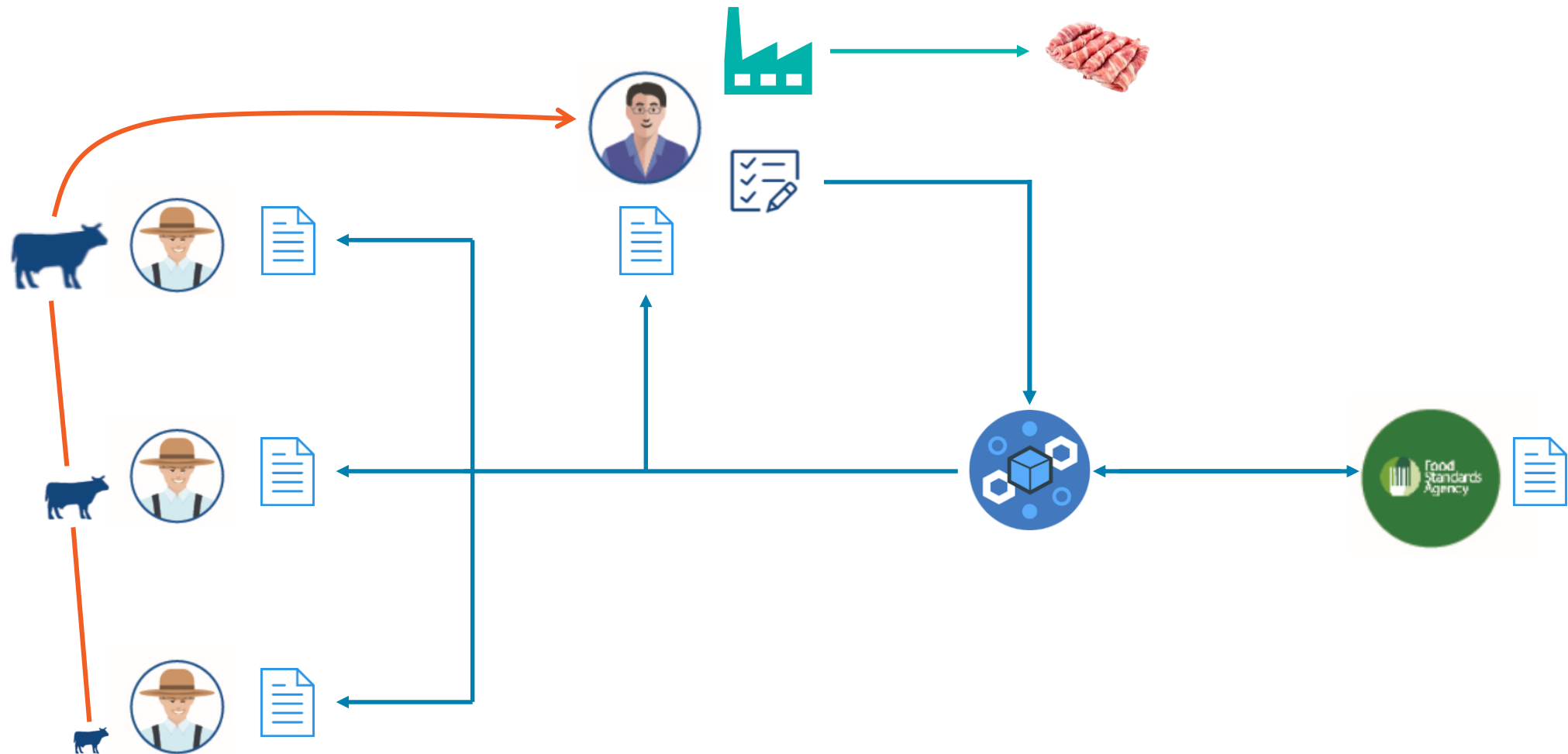
Head of Information Management, Food Standards Agency

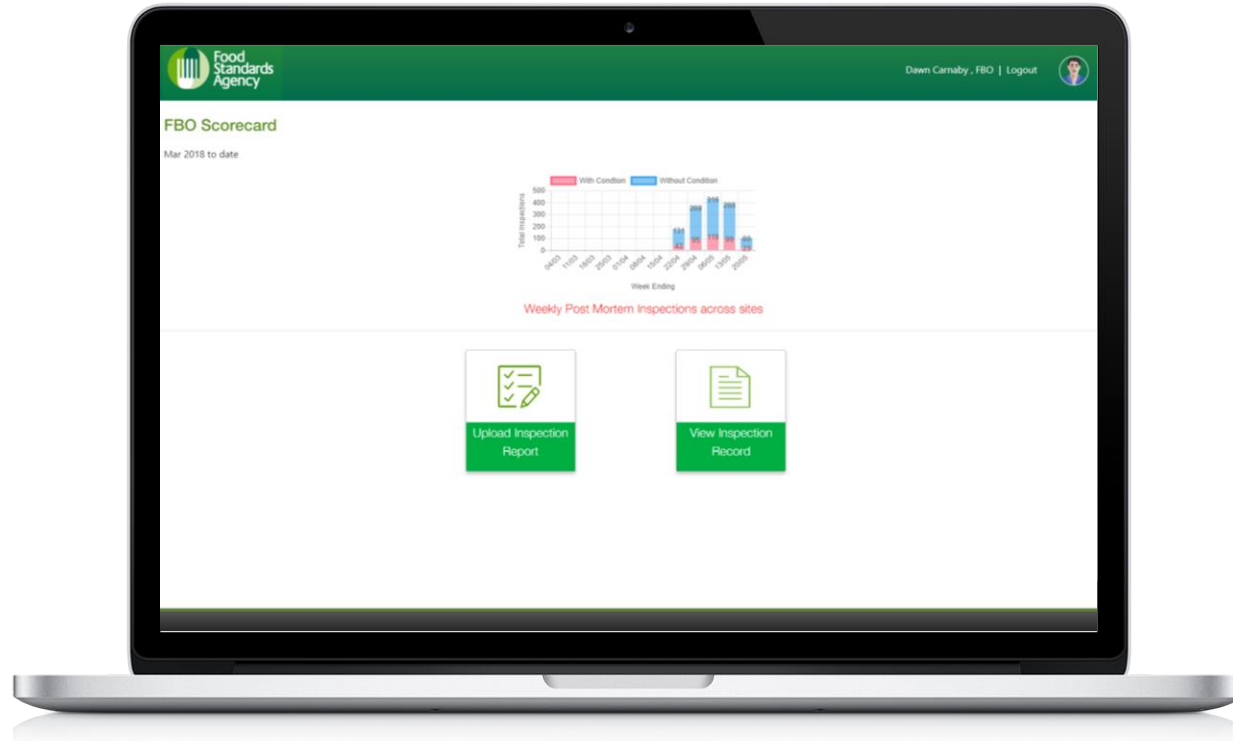
Clive House, 70 Petty France, London SW1H
9EX | 02072768761 | 07770596749 | @drsiant

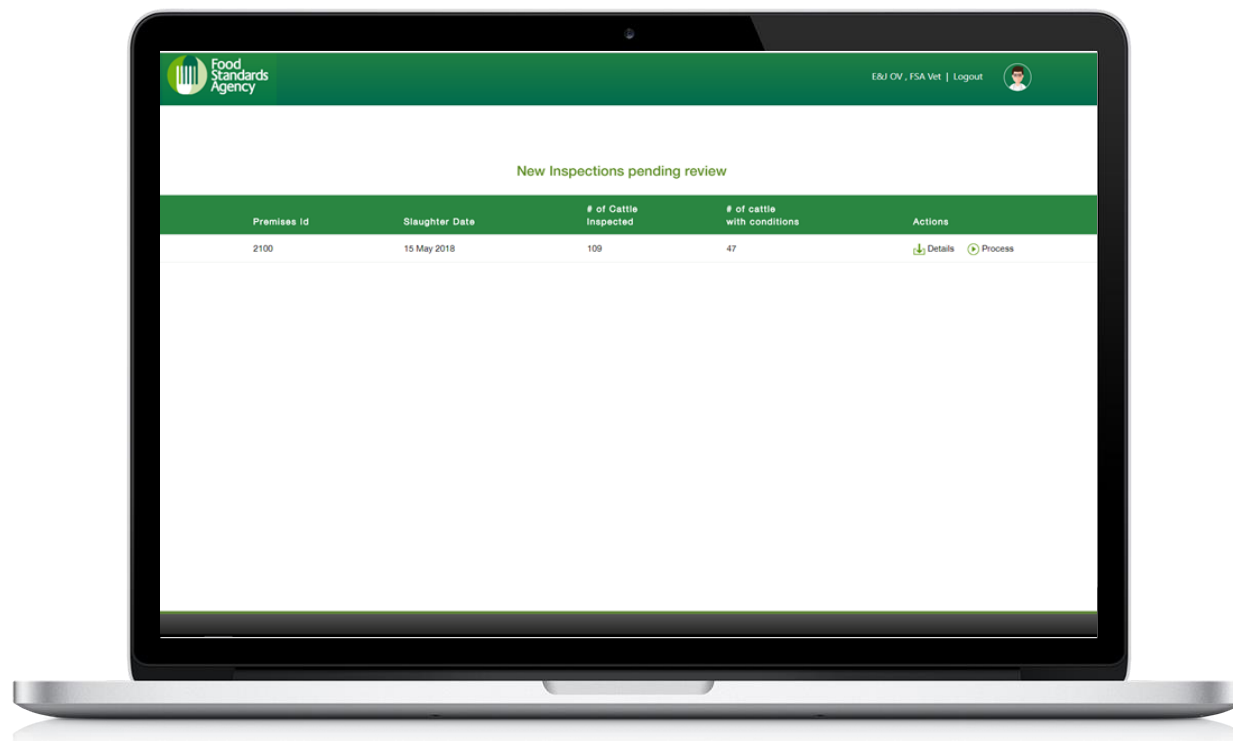
[Attachment slides 1 to16 inclusive and 23 to 29 inclusive not included – out of scope]

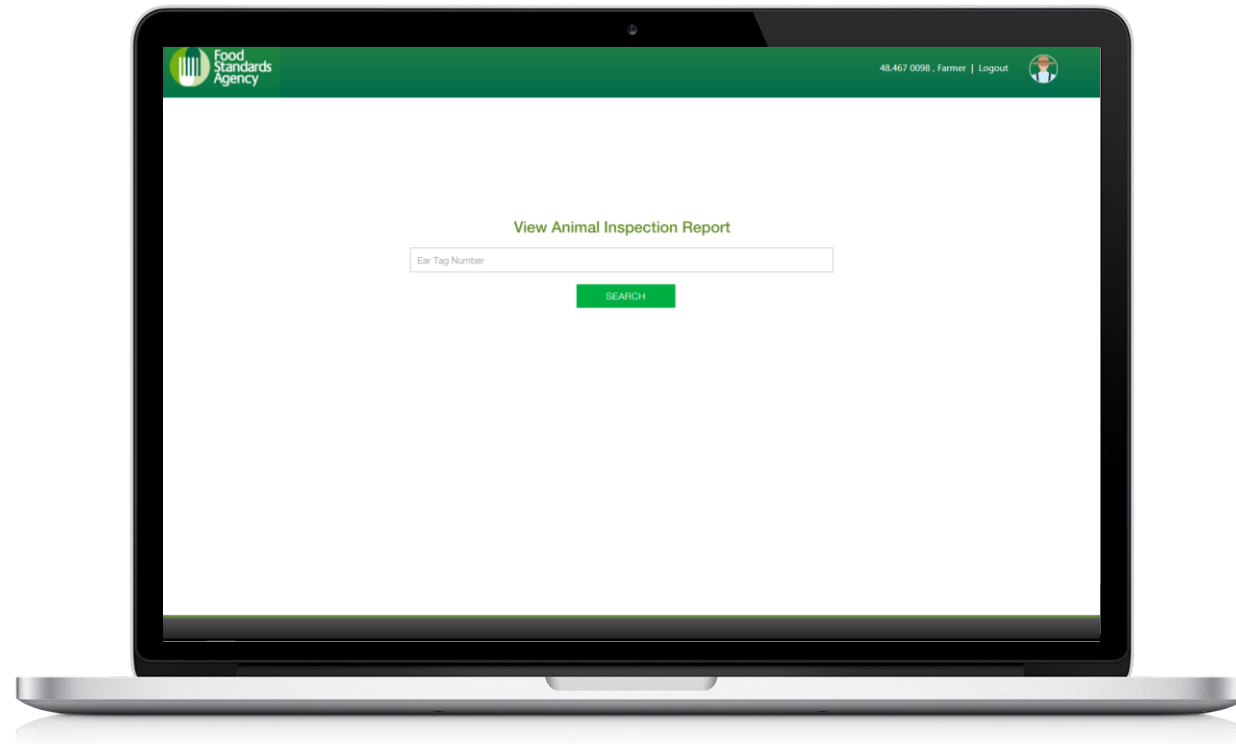


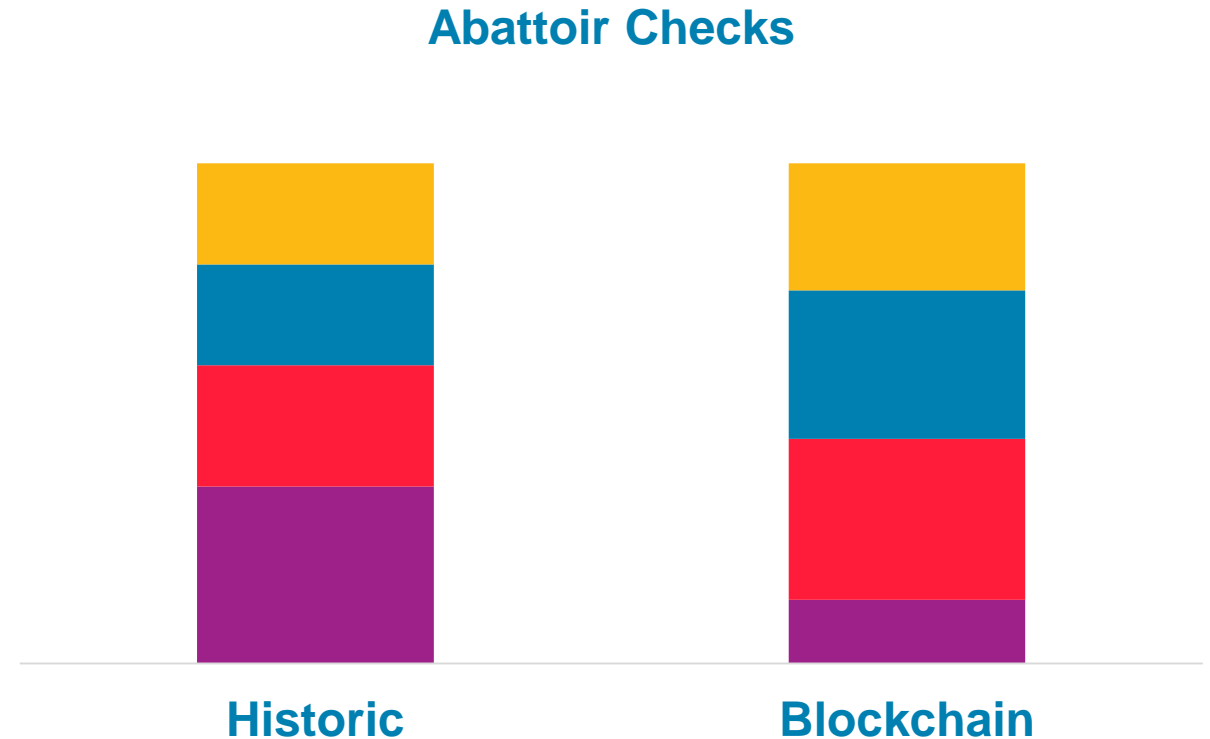
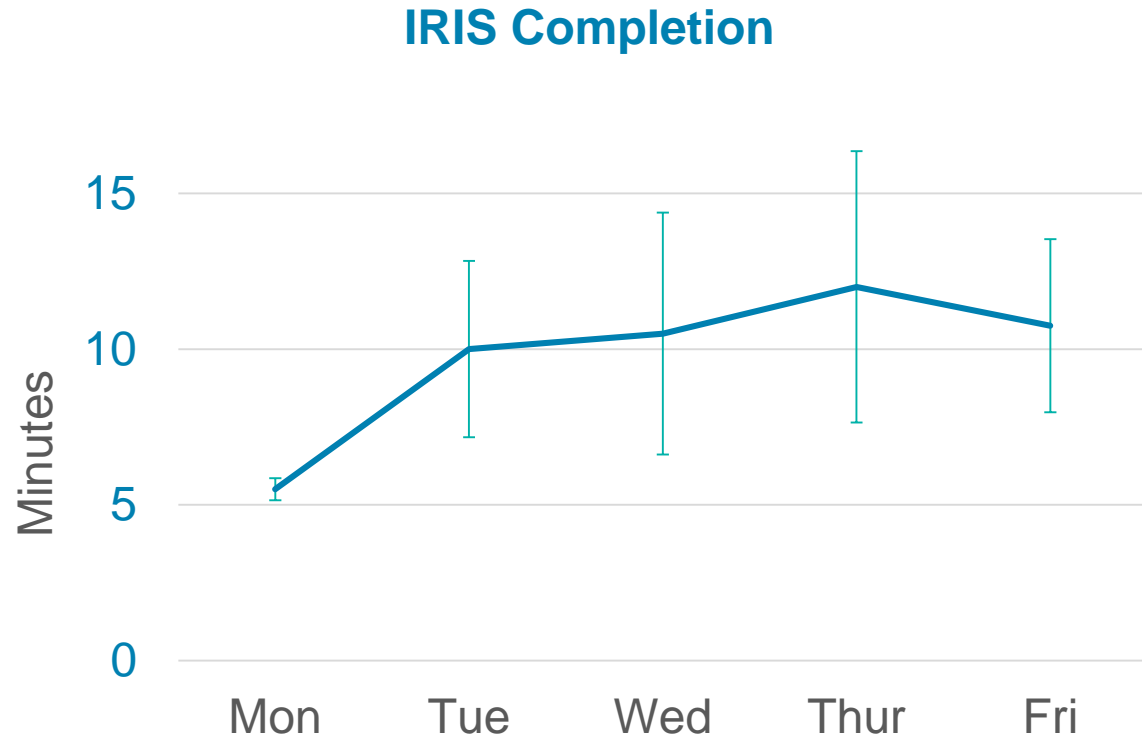












Savings: IRIS + 'Throughput for Charging' System + Rejection Meat Receipts

Farmers



Historic

Blockchain

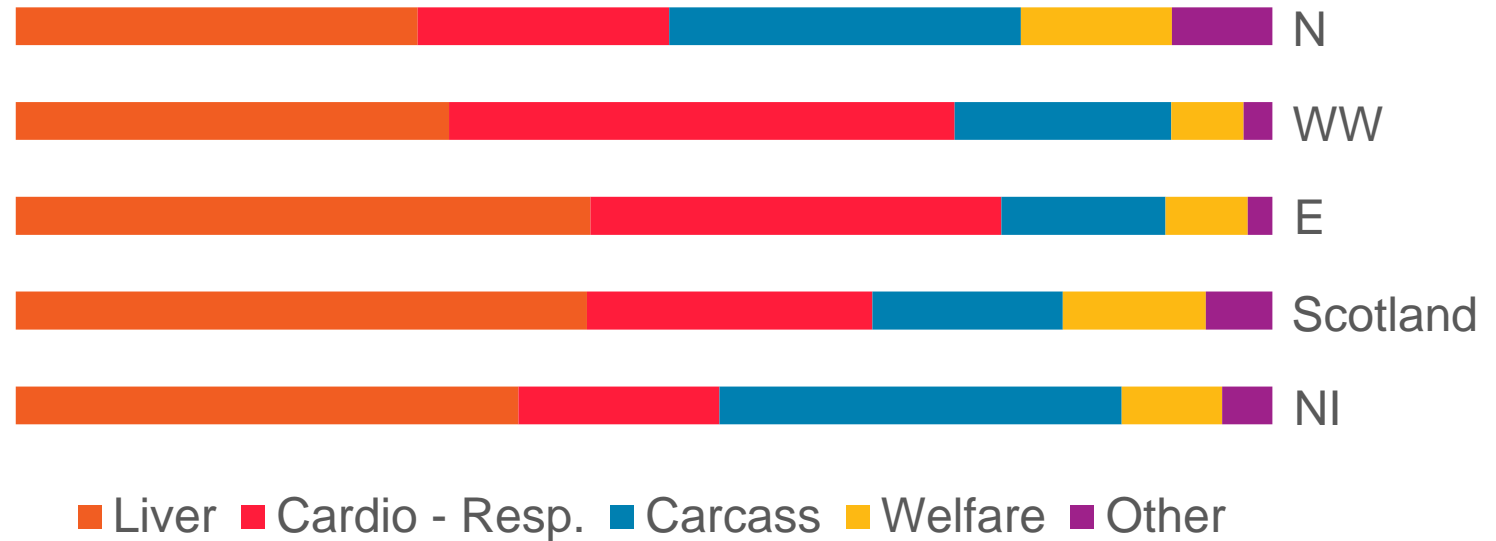
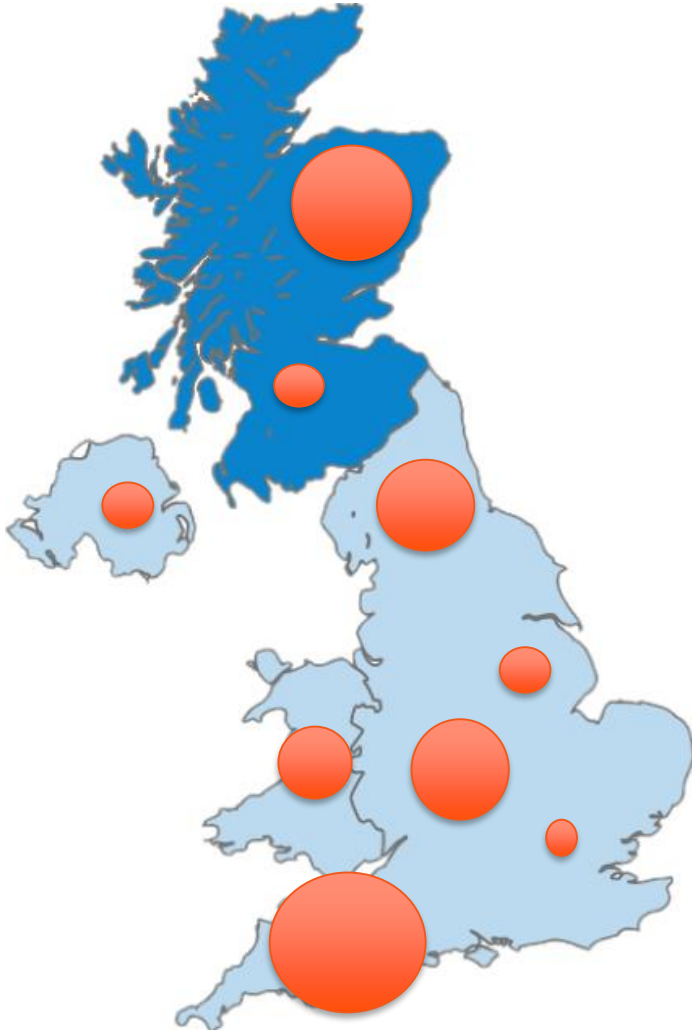
↑ Conditions Recording + Mapping



↑ Efficient and Effective Control:

- ↓ Costs (Vet. Med, Feed)
- ↑ Health & Welfare
- Safer Product

Conditions Mapping





SEFunded Fellowship- [Section 40] Quadram Institute

Evolution, diversity and epidemiology of bacterial foodborne pathogens based on whole genome sequencing.



Food chain transmission pathways of AMR not fully understood- critical if effective control strategies are to be developed.

Project objectives;

- Evaluate importance of food to the burden of pathogens and AMR in humans.
- Assess the contribution of imported vs domestically produced food to this burden.
- Investigate the role of non-pathogenic bacteria in food as a reservoir of AMR genes.

Methodology;

- Sampling of retail food in a defined geographical region.
- Comparison with contemporaneous samples from animals and humans (collaboration with PHE and APHA).
- Sequencing to evaluate the prevalence, diversity, population structure and source attribution of pathogens and AMR in.



Visited Clive House on 31st....

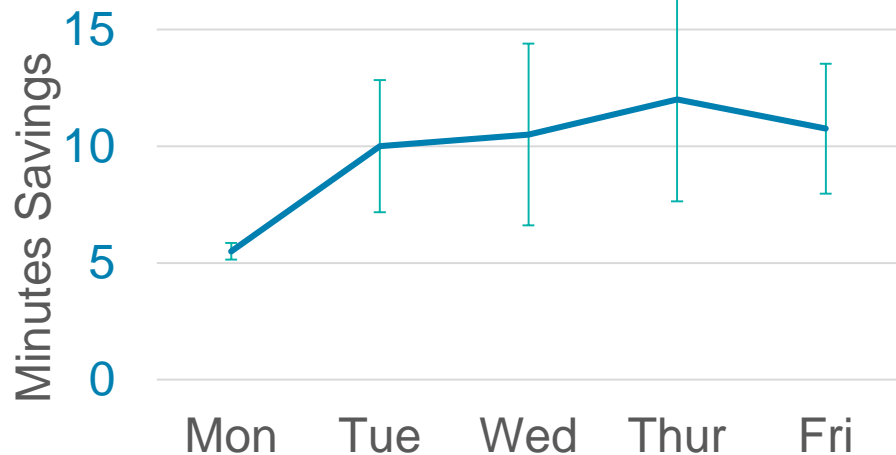


Improved Official Controls for Meat Industry- Blockchain

Aim to develop a more efficient and effective approach to Collection and Communication of Inspection Results (CCIR)- current process is time consuming and repetitive with little added value.



IRIS Completion



Daily Average: 10 min

Monthly Average: 3h 45min

Savings: IRIS + 'Throughput for Charging' System + Rejection Meat Receipts

Abattoir Checks



Historic

Paperwork

Blockchain

Hygiene

Welfare

Health

.....

Opportunity

- Building on March Board papers.
- Cross-government Science Capability Review*.
- **Leverage and influence-** EU exit providing opportunities for FSA to enhance its presence and punch above weight.
- **Innovation and opportunity to deliver-** More flexible and streamlined than larger departments*.
- **Realising Potential**

.....

Opportunities- where to look?

External

- ↑GDP research spend- 1.7% to 2.4%
- New GCSA- Patrick Vallance
- UKRI- “transition done, now transformation”- path to greater alignment/harmonisation
- Industrial Strategy Challenge Fund- academic/industrial collaborative funding— call to trusted partners?
- **Strategic Prioritise Fund**- more direct focus on Gov ARIs?

Internal

- SEF Programme Board- closer management of fund.
- Full use of SC- WG1,2 nearing completion- output suggests a shift in cultural thinking required- **implementation plan**. Two WGs in future. Already considering opportunity to contribute to the Data “sphere”.

Challenges

- Blockchain has been a success because Sian given the time/space-opportunities like this often down to **individuals**.
- If want to be truly innovative and science and evidence based;



- **Partnerships**
- **Recruitment and retention**- internal and external
 - » RA function will be greater and subject to more scrutiny- urgent priority
- PR face- largely only me. **Engagement Plan**



Inspection

Short Term

- IRIS
- Throughput
- Smart CCIR (Pilot)
- Improve Reporting Consistency

Long Term

- Smart FCI and Animal Movement
- Id. Checks + LIP (DEFRA)
- ABP Reconciliation
- SRM Controls
- Animal Welfare Alerts / Reports
(↑ reporting consistency)
- Warm Meat Controls
- Mass-Balance Tool
- KYC (Producers) Tool
- AW CoC Application / Verification (FDQ / Cert. / FSA)
- Micro and Hygiene Testing Results (Labs.)
- Audits:
 - Remote Control
 - Real-Time
 - Data Visualization – Signal Report

Costs

Short Term

- Timesheets
- FSA Meat Rejection Receipts

Long Term

- Travelling
- Timesheets (OV, MHI, Auditors) +
↑ Monitoring
- Resources (consumables, HR deployment)

Kill Number	Eartag	Body Part	Condition	Previous Owners	Food Business Operator	Premises ID	Slaughter Date
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Carcase	Contamination	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Liver abscesses	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Fluke mature	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Liver abscesses	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Pneumonia	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Pneumonia	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Head	(Other)	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Fluke mature	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Carcase	Abscesses - Hindquarter	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Traumatic Pericarditis	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Carcase	Contamination	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Traumatic Pericarditis	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Head	Contamination	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Head	Contamination	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Fluke mature	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Fluke mature	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Liver abscesses	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Fluke mature	Section 43	Dunbia Carnaby	2100	04/05/2018

[illegible]

Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
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Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Liver abscesses	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Liver abscesses	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Offal	Fluke mature	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43	Head	(Other)	Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018
Section 43	Section 43			Section 43	Dunbia Carnaby	2100	04/05/2018

[Section 43]	Offal	Fluke mature	[Section 43]
[Section 43]			[Section 43]
[Section 43]	Offal	Liver abscesses	[Section 43]
[Section 43]	Offal	Liver abscesses	[Section 43]
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[Section 43] Offal Liver abscesses [Section 43]

[Section 43]	Offal	Liver abscesses	[Section 43]
[Section 43]	Offal	Liver abscesses	[Section 43]
[Section 43]	Offal	Liver abscesses	[Section 43]

[Section 43]Offal Fluke mature[Section 43]

[Section 43] Offal Fluke mature [Section 43]

[Section 43]Offal Fluke immature[Section 43]

[Section43]
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Offal Liver abscesses

Offal Liver abscesses

[Section 43]
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[Section43			[Section43]
[Section43	Offal	Traumatic Pericarditis	[Section 43]
[Section43			[Section 43]
[Section43	Offal	Fluke mature	[Section 43]
[Section43	Offal	Fluke immature	[Section 43]
			[Section 43]
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[Section43	Offal	Fluke mature	[Section 43]
[Section43			[Section 43]

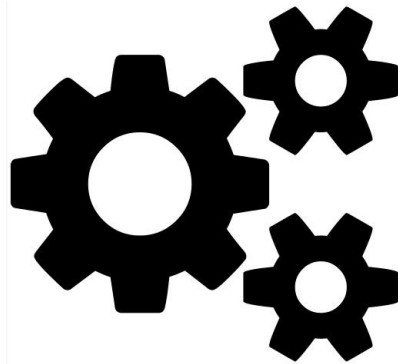
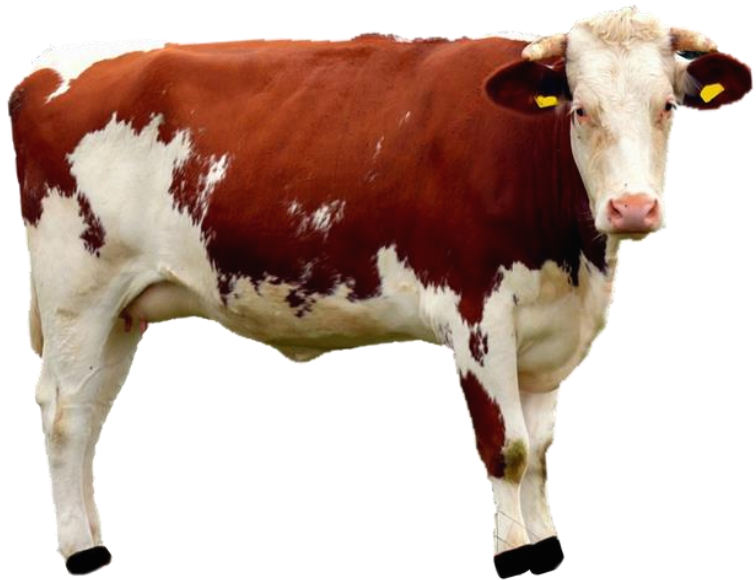
[Section 43]Carcase Bruising [Section 43]

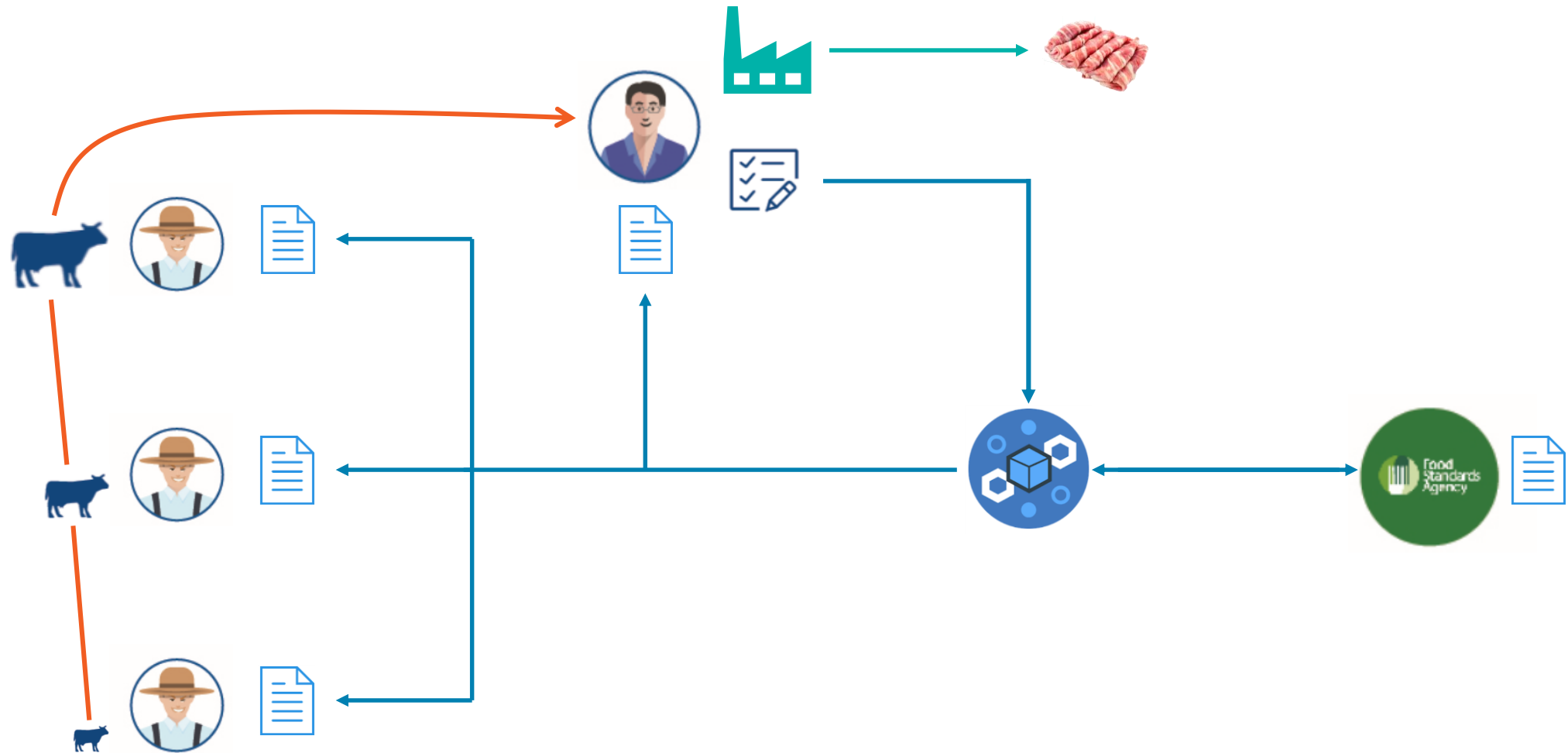
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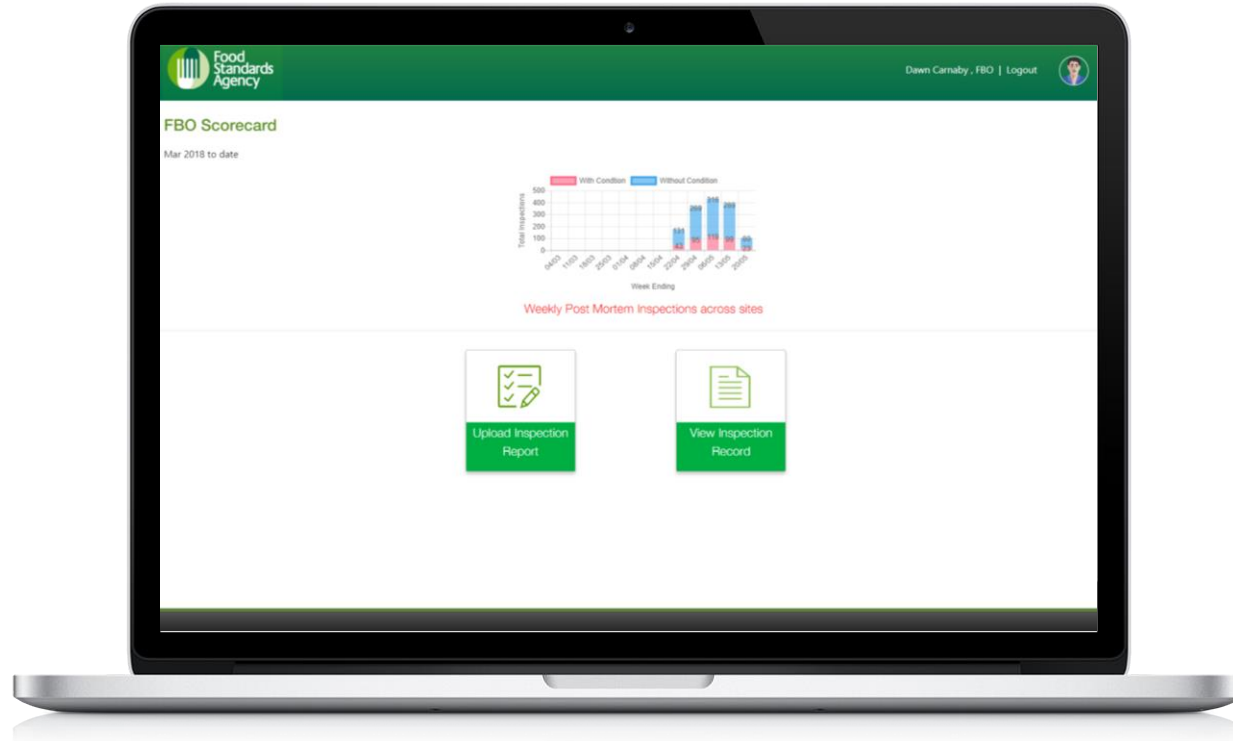
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[Section 43]			[Section 43]
[Section 43]	Offal	Hepatic scarring	[Section 43]

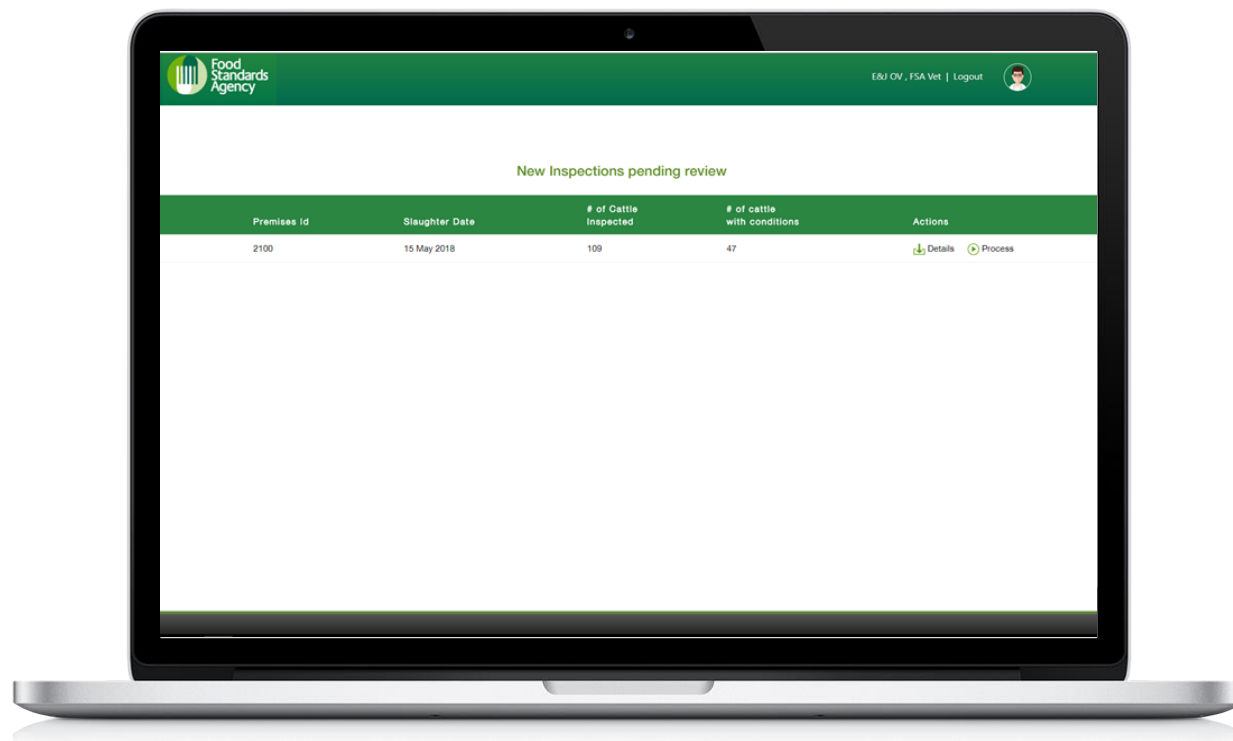
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[Section 43]	Offal	Liver abscesses	[Section 43]
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[Section 43]	Offal	Liver abscesses	[Section 43]
[Section 43]			[Section 43]
[Section 43]	Offal	Liver abscesses	[Section 43]
[Section 43]	Offal	Liver abscesses	[Section 43]
[Section 43]	Offal	Pneumonia	[Section 43]

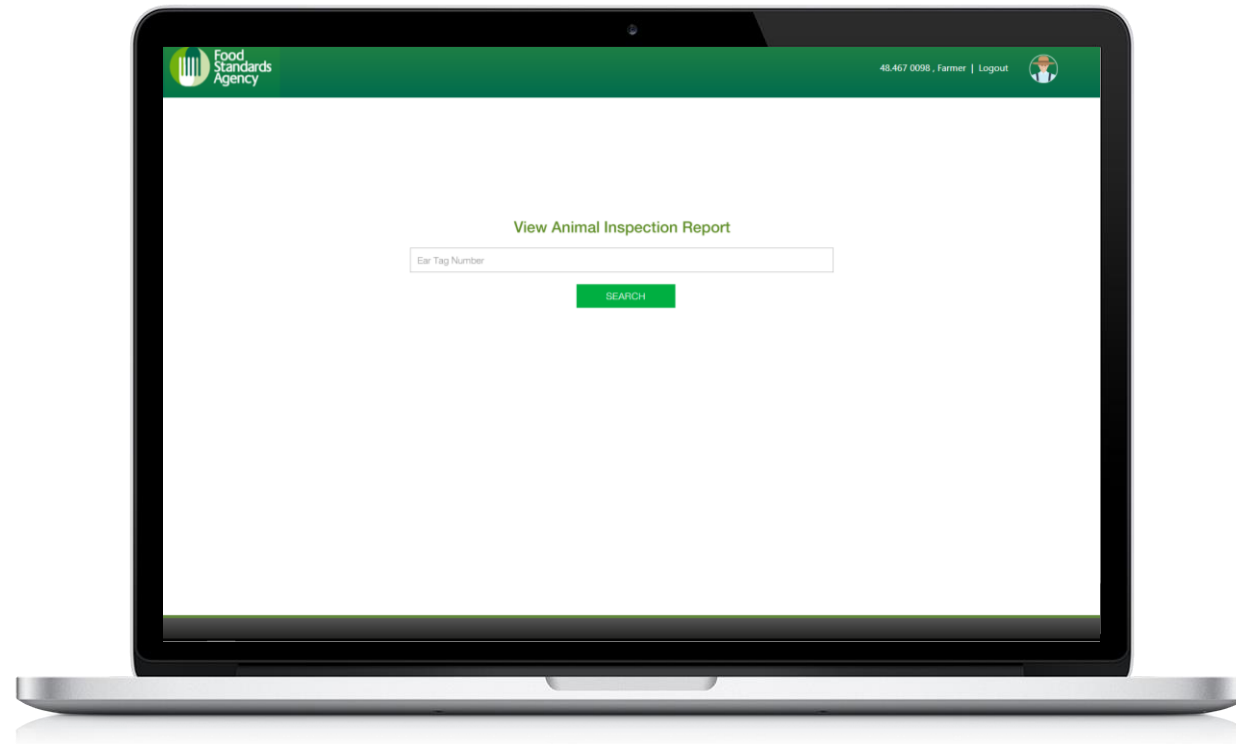


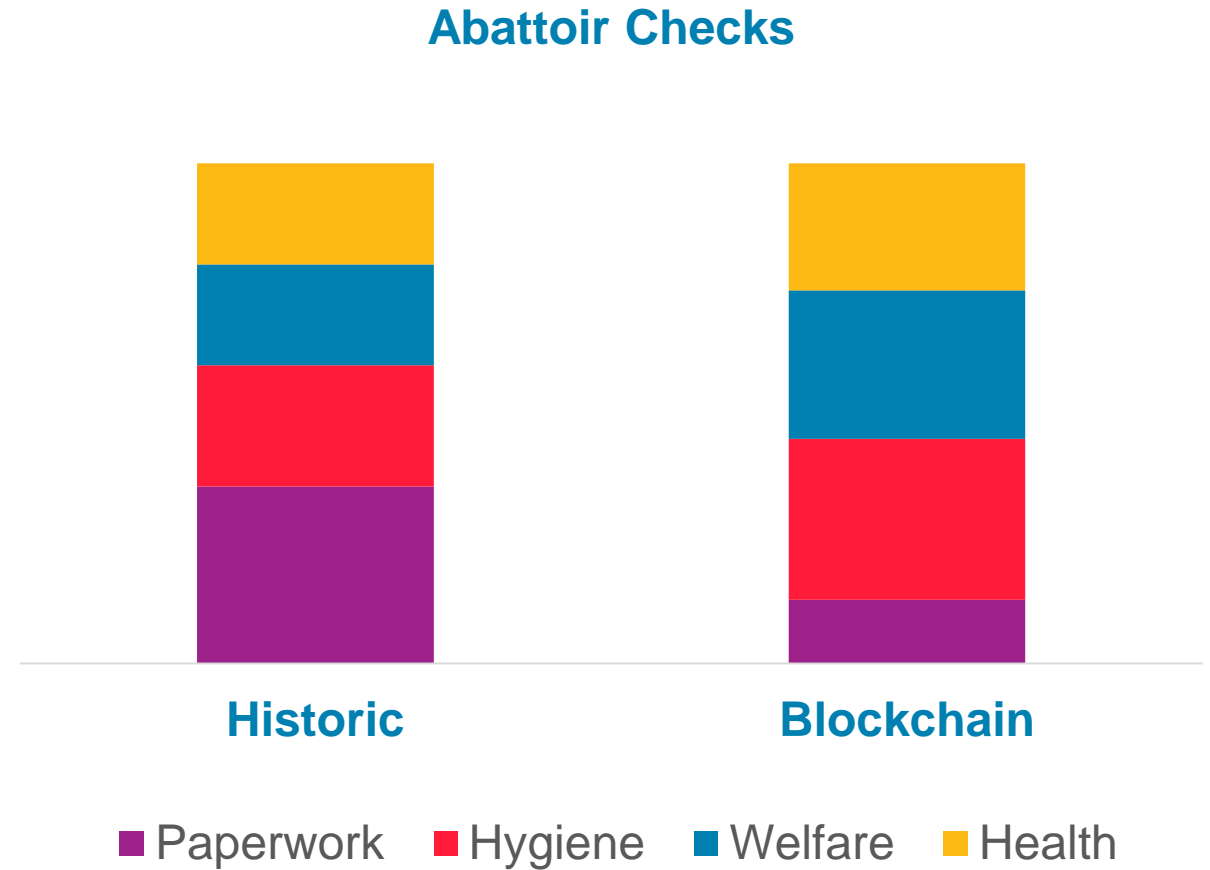
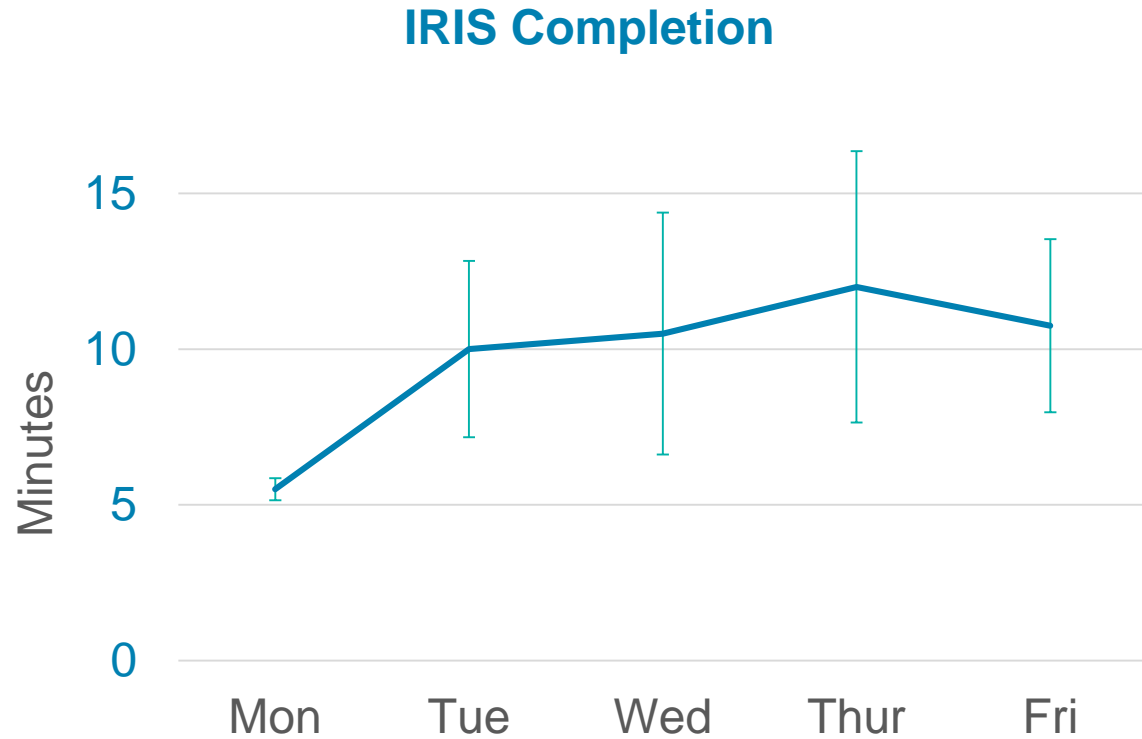












Savings: IRIS + 'Throughput for Charging' System + Rejection Meat Receipts

Farmers



Historic



Blockchain

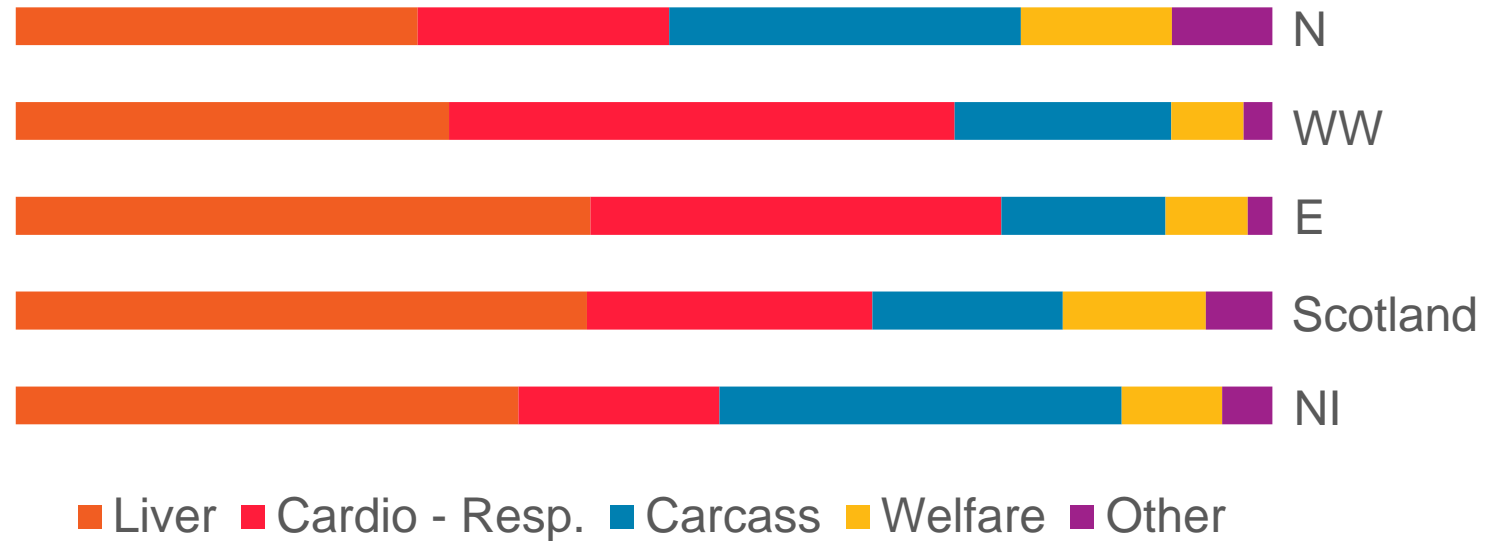
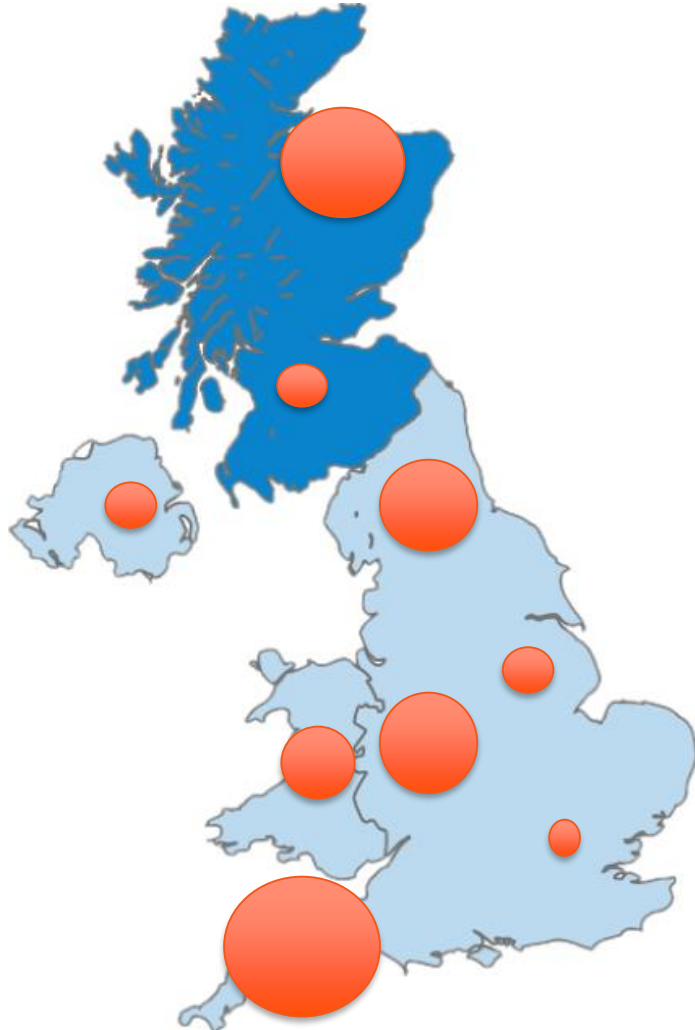
↑ Conditions Recording + Mapping



↑ Efficient and Effective Control:

- ↓ Costs (Vet. Med, Feed)
- ↑ Health & Welfare
- Safer Product

Conditions Mapping





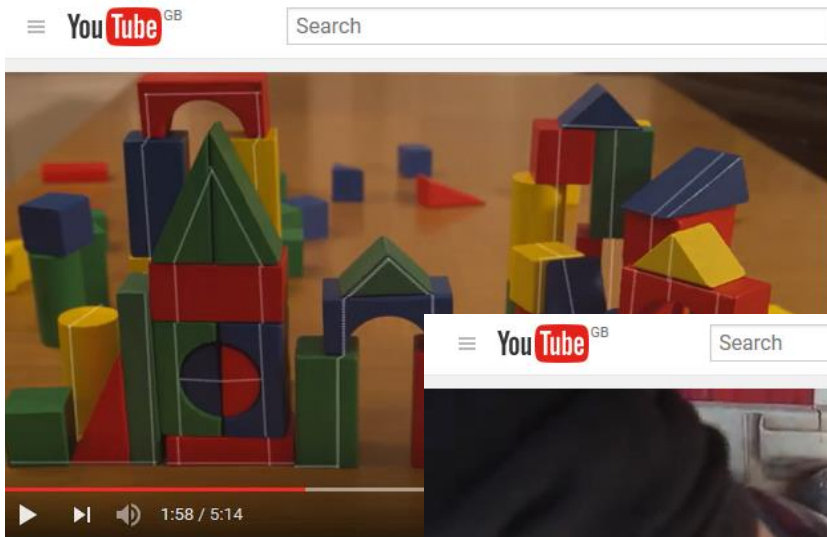
Food
Standards
Agency
food.gov.uk



25 July 2017
Julie Pierce
Siân Thomas

What is blockchain?

<https://www.youtube.com/watch?v=4sm5LNqL5j0>



Block chain technology

GO-Science



Block chain technology

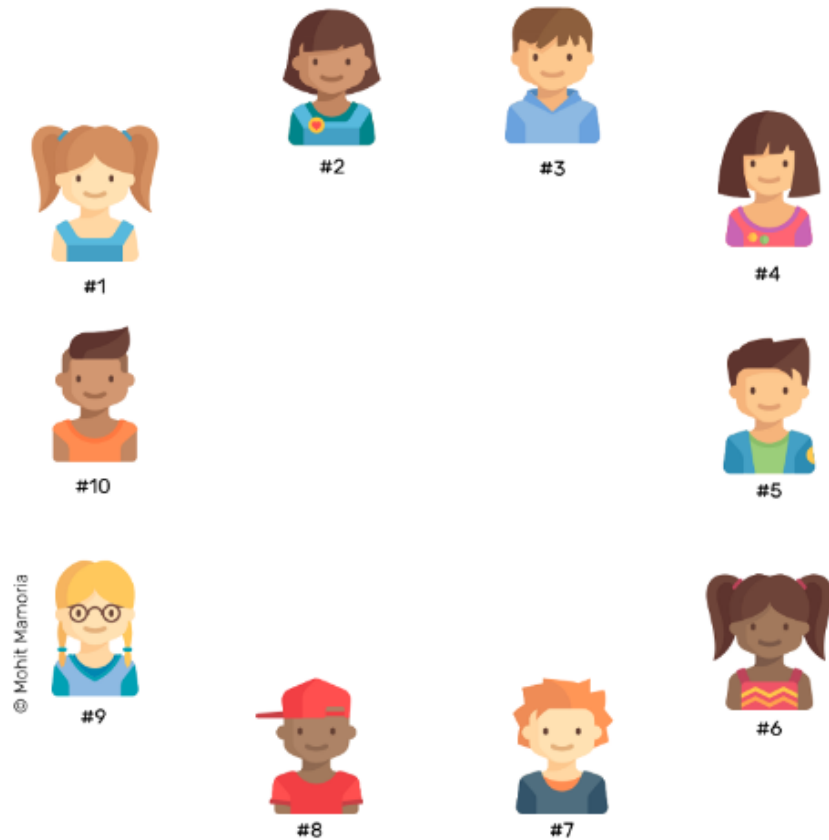
GO-Science

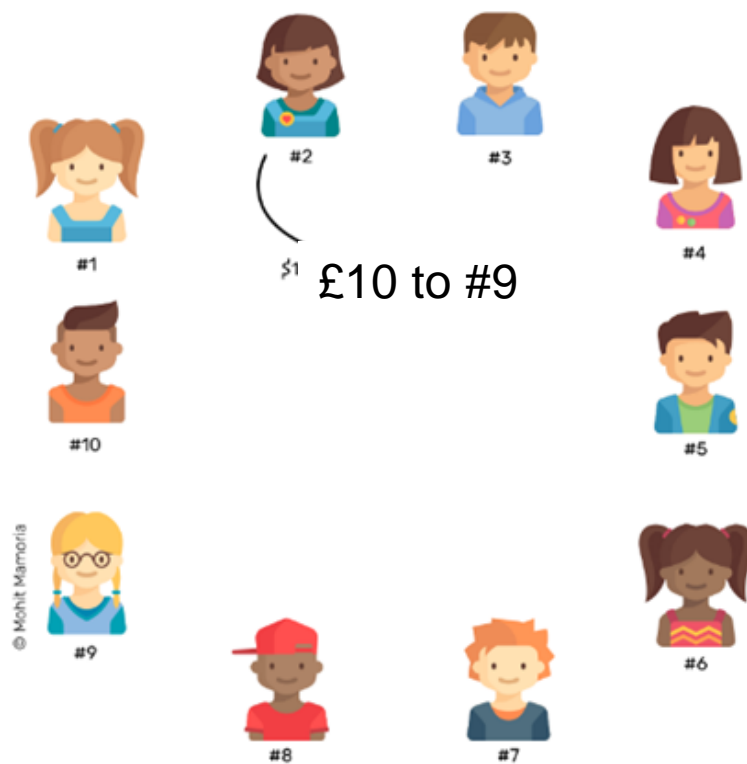


Block chain technology

GO-Science

How does blockchain work?





© Mohit Mamoria

.....

Ten records are created of the same information

© Mohit Mamoria

June 26, 2017 11:00:00am		
#2	-----	#9 \$10

Hash function (sealing the page) - security

- Once a page is full of records, the hash function is used to seal it.
- This means that no further records can be entered and the records cannot be changed
- It is an algorithmic function: a specific input gives a unique output and it does not work in reverse. Although it might be theoretically possible to identify the input number, the fact that in our example this would need to be done 9 times to falsify the record means that it is highly unlikely. Furthermore, it is in the interests of contributors to keep accurate records to ensure authenticity of their contribution

Sealing the folder – more security

- Once a collection of pages are complete the output number is agreed and participants identify an input number (randomly)
- Again, the first person to do this shares the numbers (two further numbers) with the group
- So, to falsify the record there are 3 levels of encryption in our example. In reality the complexity can be increased further
- This is a distributed ledger – distribution is fundamental to integrity and security

You don't need to remember all this security, just be reassured it is there!

Thoughts

- This is not theoretical – it is used for real and not just in Bitcoin
- Chains for food are being tested
 - Fish – Scotland and Chile and Indonesia
 - Pork in China – Walmart and IBM
 - Spices - ?
- Related chains are in use
 - Shipping containers (Rotterdam pilot)
- Fundamental to Blockchain is Trust
 - It relies on Trust so you cannot join without demonstrating trustworthiness, including who you are
 - It enables Trust (or mitigates the risk of loss of Trust)

Foodblockchain.xyz

AN ETHERIUM FOOD BLOCKCHAIN

Shipping routes: Rotterdam blockchain for shipping containers



<https://www.marinetraffic.com/en/ais/home/centerx:-12.1/centery:25.0/zoom:2>

But

- Risks with not overcoming fraud if the info is wrong on the label – but no worse than any other system without biometrics linking food to record
 - best if there is a way of authenticating the food itself
- Multiple blockchains, so how do they talk to each other?
 - How important is this or can you build it in afterwards?
- Appears to be relatively cheap to implement, but is this true?

And the potential

- With good standards, potential for linking up chains into a network, providing real time visibility
- Could help FSA with:
 - General surveillance
 - Counter fraud
 - Reduce incidents as more accurate data being passed between suppliers
 - Manage incidents providing accurate, real time traceability
 - Target interventions (role in RoF / future regulation)
- Helps industry / others
 - manage supply chains

.....

Do Blockchains fundamentally change the food supply landscape?

- Where is the power and ownership of supply chains in a blockchain world
 - Who wins? Speed to implementation? Digital companies vs traditional food?
 - Big business dominates or levels the playing field for SMEs?
 - Does frictionless operation open up the world enabling new entrants, is there removal of those who sit at the current hand-offs, do producers get a better view down the supply chain to enhance their power, does the consumer gain power through greater visibility of the supply chain?

Our role might be

- Convene and encourage pilots / tests / develop use cases
- Encourage / support engagement across industry to maximise benefit
- Making sure that the standards in other sectors are appropriate for food
- Contribute to developing standards
- Support methods that enable regulatory oversight
- Consider regulatory implications (perhaps through engaging with pilot studies)
- Learn what is happening to inform our approaches to regulation, surveillance etc

Next steps

- Nestle presentation / further discussion
- Briefing Heather / Board
- Engage with CO / Central Government in relation to developing case studies for ISO meeting on blockchain standards in May (hosted in London)



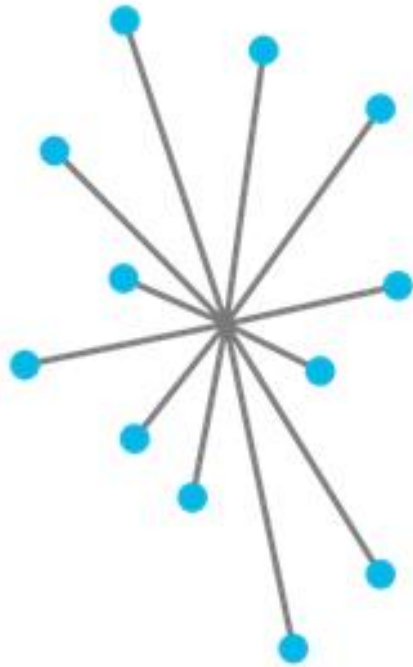
Food
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25 July 2017
Julie Pierce
Siân Thomas



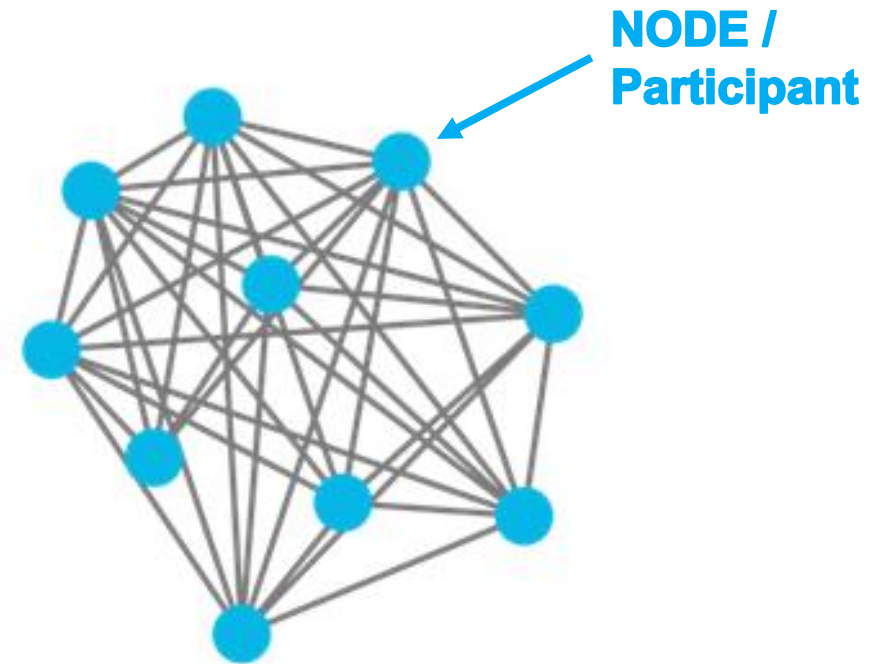
Centralized

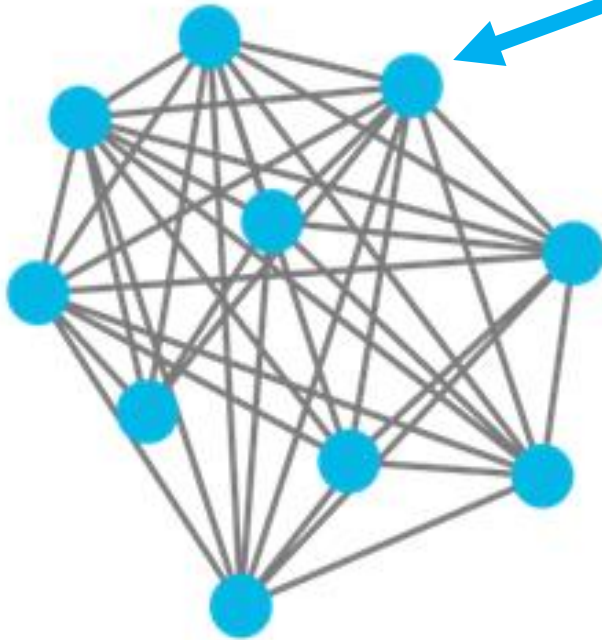


Decentralized



Distributed





Every Node represents a Computer.
All the computers share, at real time, the same complete copy of all the information stored in the Peer-to-Peer network – **CONSENSUS**

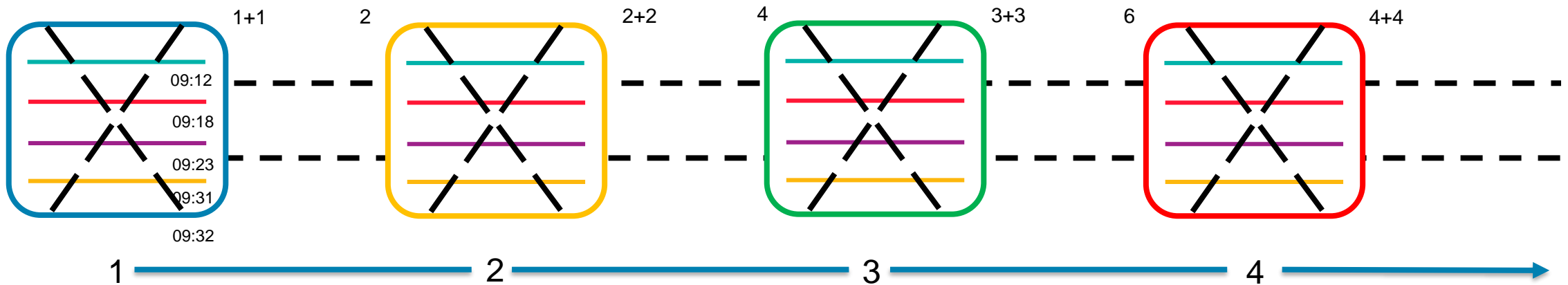
Cryptographic Consensus Algorithms:

- Proof-of-Work (PoW)
- Proof-of-Stake (PoS)
- Proof-of-Activity (PoA)
- ...

Blocks are 'Hashed' using Hash Function:
Variable inputs → Unique output

BLOCKCHAIN

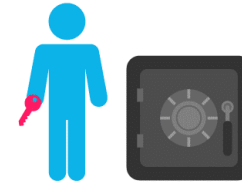
‘A Decentralized and Distributed Digital Ledger that is used to record transactions across many computers so that the record cannot be altered retroactively without the alteration of all subsequent blocks and the collusion of the network.’ (Wikipedia)



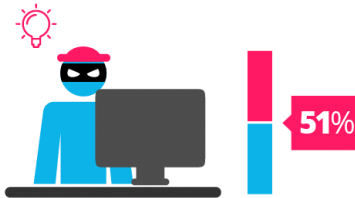
Proof of Work vs Proof of Stake



proof of work is a requirement to define an expensive computer calculation, also called mining



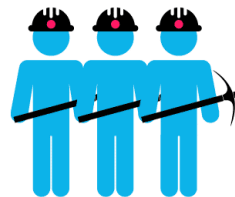
Proof of stake, the creator of a new block is chosen in a deterministic way, depending on its wealth, also defined as stake.



A reward is given to the first miner who solves each blocks problem.



The PoS system there is no block reward, so, the miners take the transaction fees.



Network miners compete to be the first to find a solution for the mathematical problem



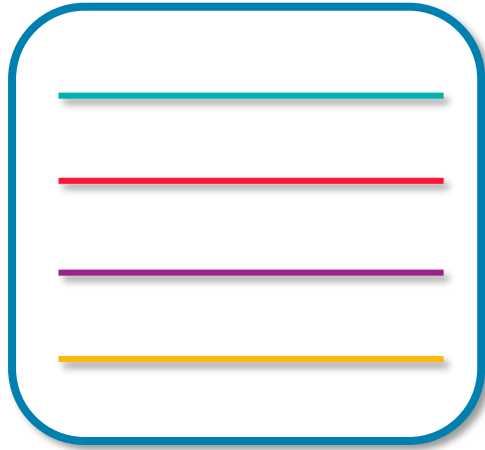
Proof of Stake currencies can be several thousand times more cost effective.

Very Difficult to Solve

7			1		8			
	9						3	2
					5			
						1		
9	6			2				
						8		
		5			1			
3	2							6

Very Easy to Validate

8	1	2	7	5	3	6	4	9
9	4	3	6	8	2	1	7	5
6	7	5	4	9	1	2	8	3
1	5	4	2	3	7	8	9	6
3	6	9	8	4	5	7	2	1
2	8	7	1	6	9	5	3	4
5	2	1	9	7	4	3	6	8
4	3	8	5	2	6	9	1	7
7	9	6	3	1	8	4	5	2



Transactions:

- Transaction Record available to all participants
- Selective access to the Transaction Details:
 - Batch
 - Number
 - Weight
 - Value
 - Quality
 - Origin
 - Destination
 - Temperature
 - Transport Duration
 - ...

- Different Levels of Access to the Information – Predefined Structure and **Smart-Contracts**

Smart Contracts:

To Complete a Transaction between **A** and **B**, **C** must be achieved.
Connected to the computed code (App – controls who can do what)



C information transferred and made available on the blockchain

- Once the data is validated, the smart contract automatically triggers a chain of events: acceptance of products (supplier - customer), payments, invoicing, stock update, resources releasing, etc.

Blockchain Features:

- **Immutability and Security** – network design
- **‘Trustless’ Network** – ‘distributed trust’, consensus, smart contracts
- **Transparency** – Among the participants, shared ledger copies
- **Granular Access Control and Privacy** – ‘keys’ and signatures

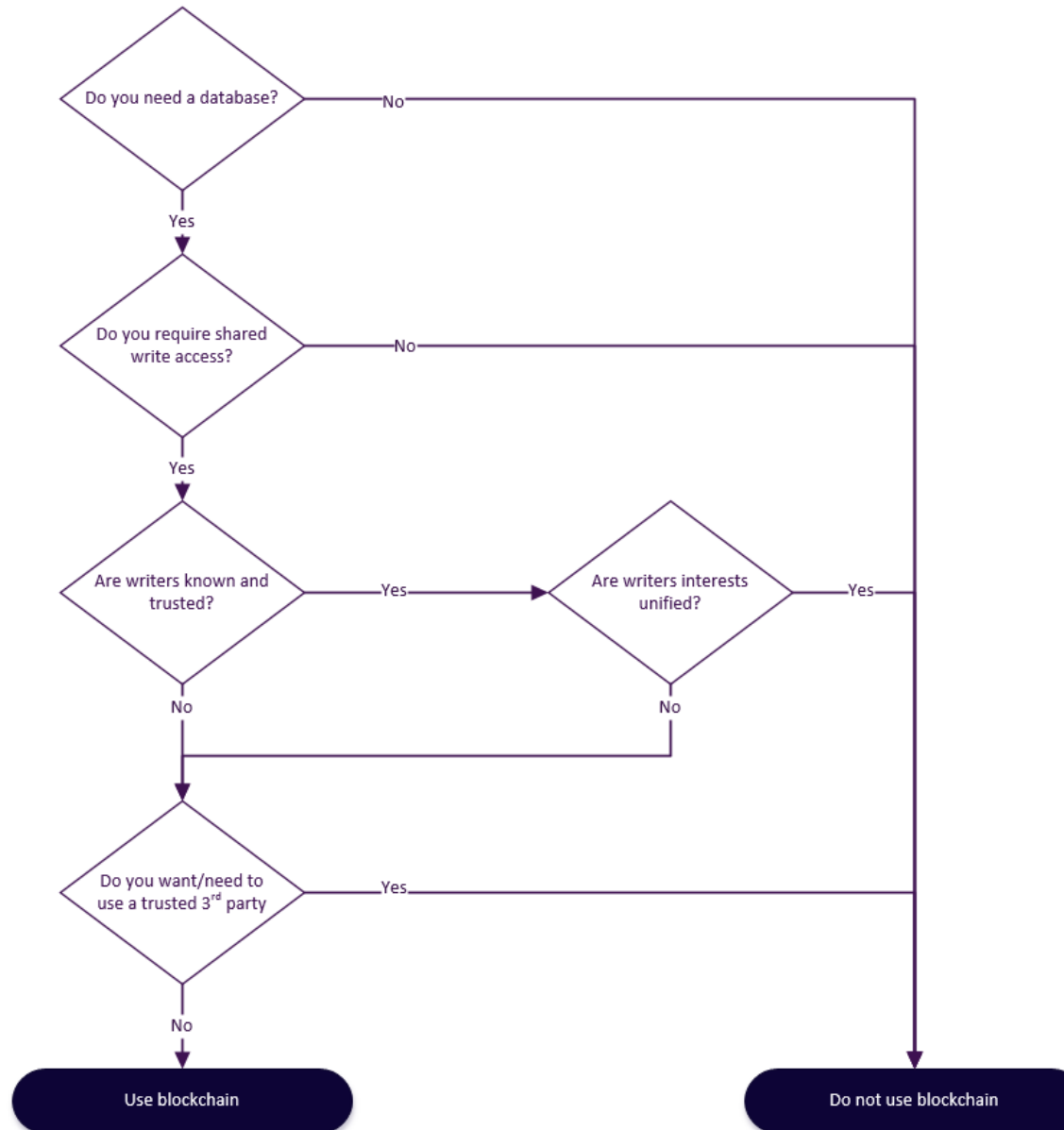
Blockchain Struggles:

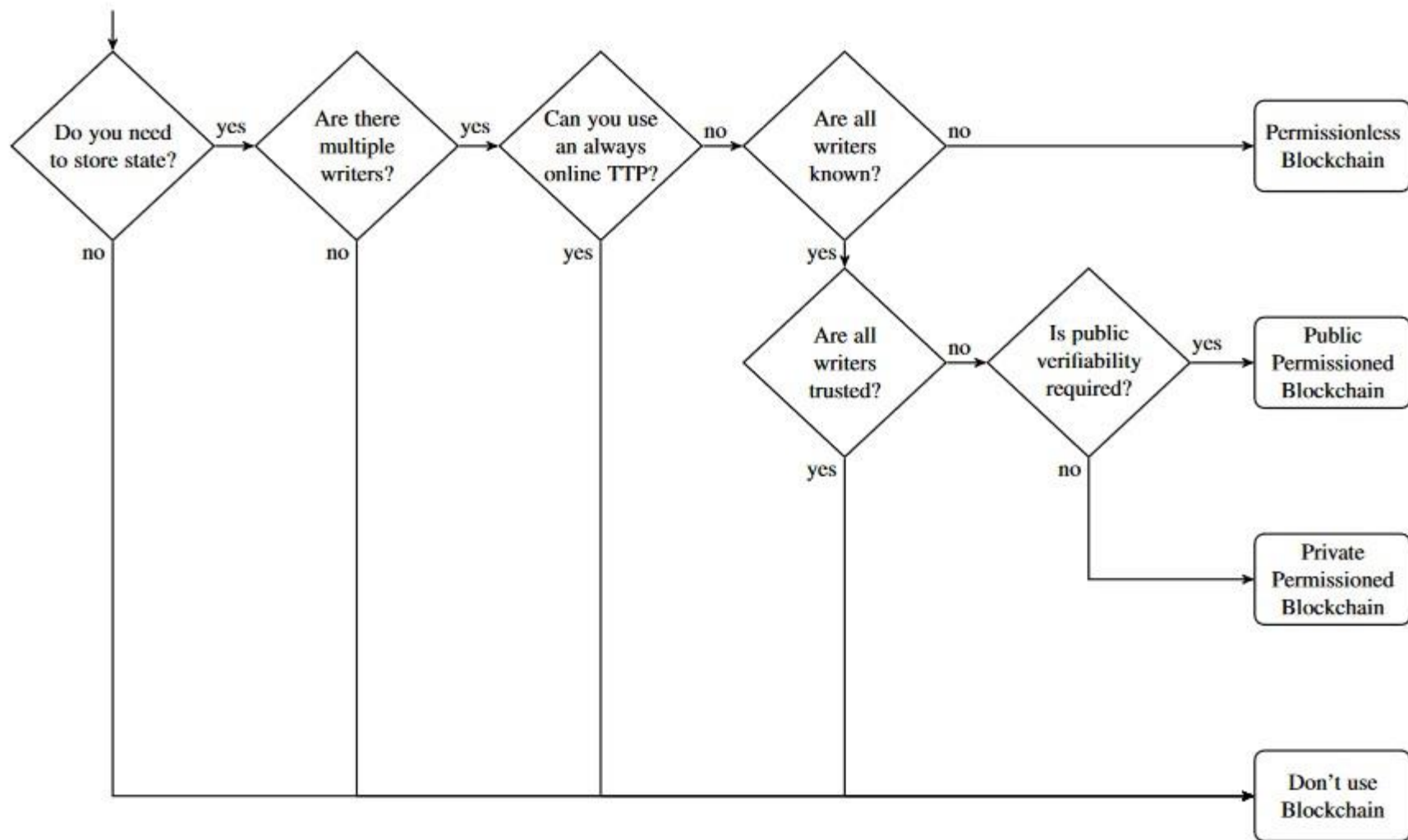
- **Inter-Operability** – communication between different Blockchains
- **Scalability** – network congestion (number of transactions per second)
- **Initial Costs (?)** – compared to the foreseen long-term benefits: productivity, efficiency, timeliness and reduced costs
- **Regulation**
- **Data Governance**

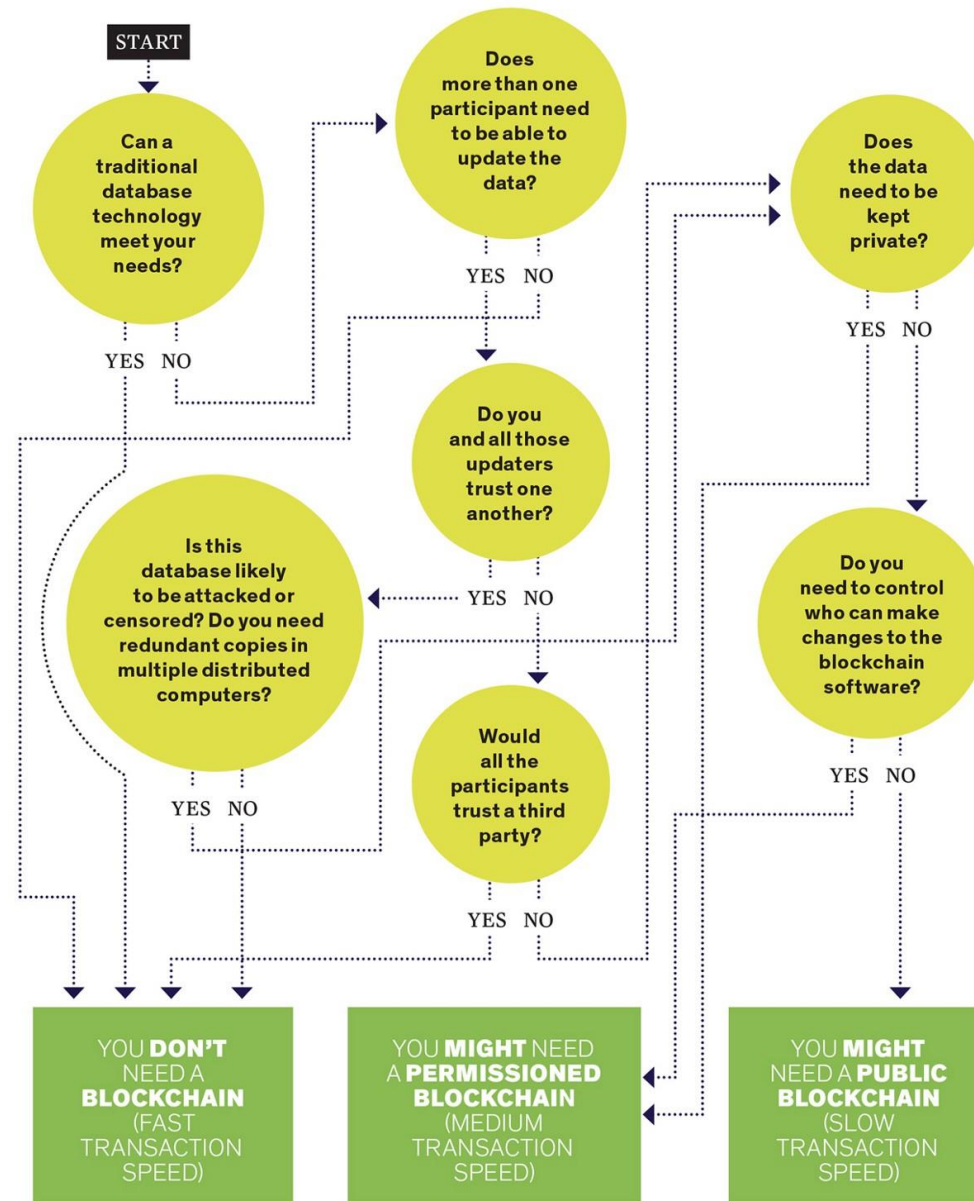
Where Are We Now? Early 2018

- ❑ 'I can assure you that blockchain is no longer in proof of concept – many projects are in production' **Deloitte's fintech consulting partner** in Hong Kong.
- ❑ **World Bank** launches a blockchain lab to help fight against poverty
- ❑ **UK Government** Lures Distributed Ledger Projects With \$26 Million Fund
- ❑ **European Commission** launches Blockchain Observatory and Forum
- ❑ Adoption Of Blockchain By The **U.S. Federal Government** – The Food & Drug Administration issued a "[sources sought](#)" notice late in 2017 for an application of blockchain.
- ❑ First ever beer placed on blockchain (**Northern Ireland**) + Limited Edition Whisky (**Scotland**, 2021)
- ❑ Mangoes Recall in 2.2 sec. (Blockchain) against 6 days 18 hours and 26 min (Current System)
- ❑ Projects: Walmart – Maersk – Alibaba – JD.com – Nestle – Dole – Unilever – Tyson Foods – ...
- ❑ Still **Very Early Stage**: Internet from the 70's, early 80's + Hype

‘Do I Really Need Blockchain for My Business ?’









Jan. 2016



Nov. 2017

Government & Agency Position:

- 'Identifies DLT's potential to transform the delivery of public and private services and to redefine the relationship between government and the citizen in terms of data sharing, transparency and trust.'
- Effective collaboration within and between the public and private sectors - focusing on shared benefits, information sharing, coordination, innovation and a facilitative approach to regulation
- DLT Features: data fragmentation reduction, enhanced traceability and accountability, cost-savings, efficiencies on a scale sufficient to impact national finances and enhanced interoperability.
- Acknowledge of considerable commercial interest in DLT, bringing necessary skills and resources
- FSA promotes the following principles: open data, sharing data, interoperable and real time data exchange.
- FSA should endorse and demonstrate the benefits of adoption of more robust and transparent traceability systems.
- Secure the UK's competitive position as a global leader in technology-based innovation - protecting the security of government and citizens' data.
- Momentum in the UK has been disrupted by the pressing need to prepare for the demands and opportunities of Brexit: Accelerate digital maturity, enhancing the productive capacity of our businesses and benefit citizens.

Data Governance:

‘Comprises the rules set by the owners and participants of the ledger that safeguard their private interests.’

- ‘Supplemented by regulation and / or legislation, which comprises the **framework of rules** that are set by an outside authority to protect the broader interests of society.’
- Two sets of rules or codes that control the operation of digital technologies:
 - **Legislative** Code – Law and Regulations Framework
 - **Technical** Code - Set of Rules that determine the operation of the Algorithms Encoded by the Software (requires unusual mixes of skills)
- Aims to protect the participants and stakeholders and regulation to ensure the system is **resilient to systemic risk or criminal activity**.
- Find the right balance between **safeguarding both participants and society interests** whilst **avoiding the stifling of innovation** by excessively rigid structures.
- Opportunity to take advantage of the potential **interactions between legal and technical code**:
For example, public regulatory influence could be exerted through a combination of legal and technical code, rather than exclusively through legal code as at present.



FSA CCIR
Blockchain Pilot



**Earliest
Testable
Product**



**Earliest
Usable
Product**



**Earliest
Lovable
Product**

Audit – Key Points: Brainstorming

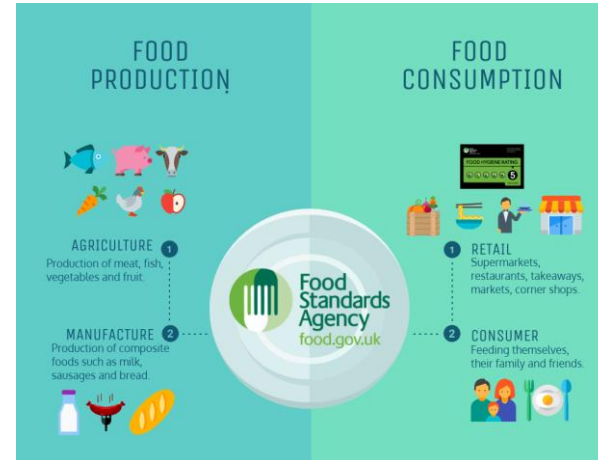
Present & Future

- Improvement Needed (Immediate)
- Real-Time Audit
- Time Saving
- Space Access Limitations
- Technology (e.g. IoT)
- Data Reliability (Human vs. CPU)
- Incidents (Past / Present / Future) (e.g. Id., Labelling, RFID)
- HACCP
- Traceability
- Standards (Domestic and 3rd C. / Export)
- Data Access (What and How – full list vs. signal report)
- Hygiene Parameters
- Fraud
- Others (FCI, AbP, Warm Meat, Welfare...)



Prof. Guy Poppy

- From **farm to fork** the work of the FSA, affects **everyone** in the UK, daily.
- FSA responsibilities;
 - **Food we can trust**
 - **Food is what it says it is**
 - **Able to make an informed choice**
 - **Access to a healthy diet**



Science at the FSA

- **Independent non-ministerial department** that strives to have **science and evidence at the heart of everything** we do.
- Role of **Chief Scientific Advisor** is to offer **advice and challenge**.
- This is in conjunction with the **Science Council** and **8 Science Advisory Committees** from which we draw further independent, expert scientific advice.

Science at the FSA

- **Core-** responsive
- **Investment-** preparing, evolving, improving
- **Strategic-** horizon scanning, partnerships, trials

Innovation \rightleftharpoons Regulation

Competitive Advantage

Science in Action at the FSA

Runny Eggs Case Study

- In the late 1980s, ***Salmonella enteritidis**** caused the largest and most persistent epidemic of foodborne infection attributable to a single subtype of any pathogen.
- In England and Wales alone, it is estimated that >525,000 people became ill during the course of the epidemic.
- We previously advised that vulnerable groups should not consume raw or lightly cooked eggs, because of the risk of serious illness.

- January 2015 the **Advisory Committee on the Microbiological Safety of Food (ACMSF)** tasked to review the evidence- published July 2016.
- Presence of *Salmonella* in UK hen eggs has been dramatically reduced in recent years -the **British Lion Code of Practice**.



- More than 90% of UK hen eggs are produced under this scheme.
- Includes a suite of measures;
 - Vaccination for *S. enteritidis* and *S. typhimurium*
 - Cool chain from farm to retail
 - Enhanced testing for *Salmonella*
 - Improved farm hygiene including better rodent control
 - Independent auditing
 - Date sampling on each individual egg and traceability

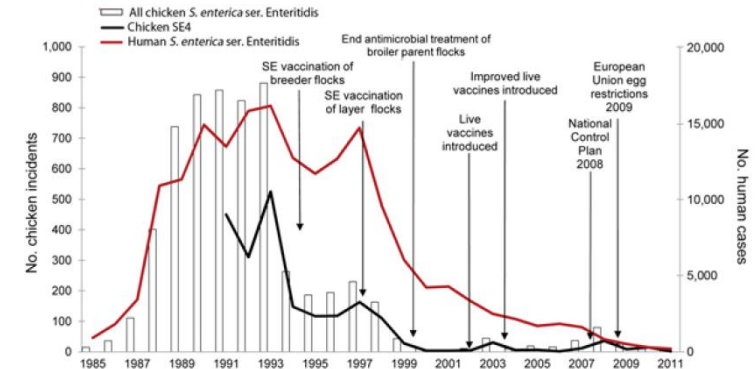
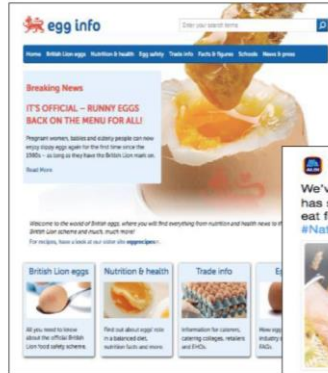


Figure 1. (Lane *et. al.*, 2014): Trends in the reporting of incidents of *Salmonella enterica* serovar Enteritidis in chickens in Great Britain versus laboratory reporting of human *S. enterica* serovar Enteritidis infections, England and Wales, 1985–2011.

Based on **ACMSF recommendations**, **FSA reviewed** its advice- can now safely eat raw or lightly cooked UK hen eggs or foods containing them, including vulnerable groups.



-
- UK has **lowest *S. enteritidis*** national prevalence levels of the major poultry producing MSs.
 - 2015 estimates highlight scale/significance;
 - **12.2 billion eggs consumed per annum**
 - **36 million laying hens in UK**
 - **£895 million sales**

Just one example

-continuously review evidence and our
advise as new evidence becomes available

Looking to the Future



RoF

- A major modernisation programme

Some RoF Principles



- Our regulatory system should make it **as easy as possible** for everyone to comply with the standards that we have all come to expect.
- It's the responsibility of food businesses to ensure the food they produce or sell is safe and what it says it is- a shift towards **regulated self-assurance and earned recognition**.

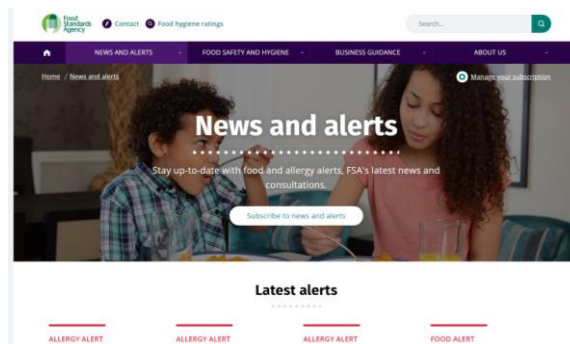
IT Crucial to Our Vision



- Having the **right data** (and the **skills to interpret and act** upon it) is crucial in enabling the FSA to have the **greatest impact** in the work we do*.

-New beta website; www.beta.food.gov.uk/ -easier for businesses and consumers to find the information they need.

-New food and allergy alerts service, powered by **APIs**, to get information about food recalls and withdrawals to businesses and consumers quicker.



Enhanced Registration- 2019



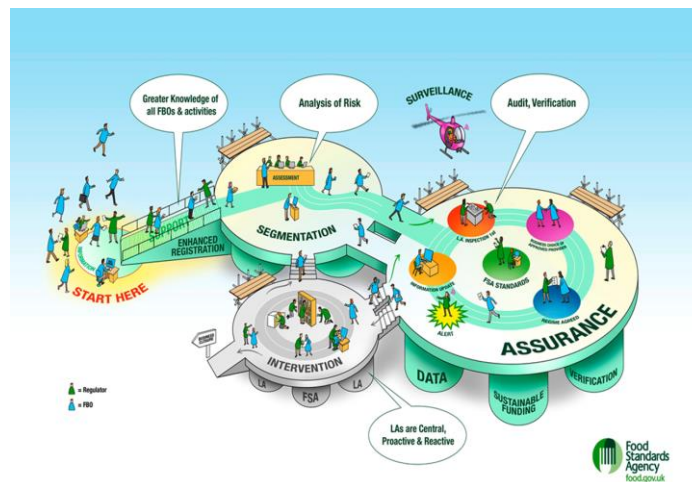
- May be surprised that FSA currently doesn't know how many food businesses exist or who is running them!
- Strengthen our ability to be an effective **Central Competent Authority**- better overview, support and responsiveness
- **Setting businesses up for success**
- **Target Operating Model**- offer more options to business than in the present 'one size fits all' approach.



Enhanced FBO Monitoring



- New technology has the potential to provide a range of data that could support the **target operating model** e.g. smartphone apps, cloud-connected sensors etc.



Exchange of Data Between FBOs, LAs & FSA



- **Three-month trial** saw five businesses in the Cambridge area replace their paper-based food safety management processes with Checkit's digital solution.
- Daily compliance checks recorded via smart, wireless sensors and the results automatically uploaded to the cloud for storage (digitally time stamped and tamper-proof).

Exchange of Data Between FBOs, LAs & FSA



- Through the cloud-based control centre, users can access records remotely, receive alerts on any anomalies and use smart dashboards to track performance in **real-time**.
 - Help inform the decision making approach for auditors and inspectors (**better regulatory judgements**)
 - **Increase efficiency** of food safety inspections by **concentrating on high risk businesses**
 - Support businesses with **regulated assurance** of food safety
 - **Improved transparency** between businesses and regulator- **Trust in a robust system**
 - **Optimise public protection**

Improved Official Controls for Meat Industry (Blockchain)

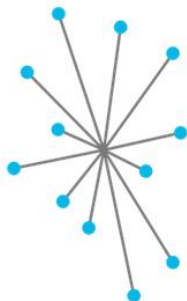


- Improving the way we deliver official controls for meat.
- Working with industry to develop a more efficient and effective approach to **Food Chain Information (FCI)** and the **Collection and Communication of Inspection Results (CCIR)**, to provide more accurate and timely feedback.



Blockchain Principles

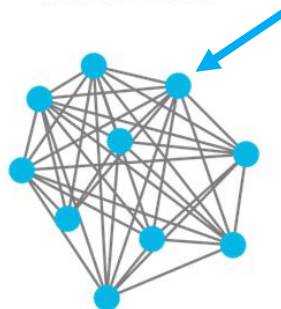
Centralized



Decentralized



Distributed

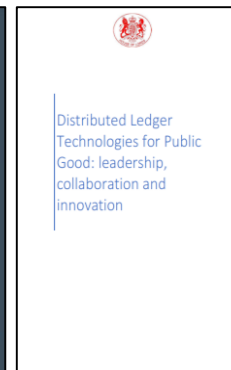


NODE / Participant

Every Node represents a Computer.
All the computers share, at real time, the same complete copy of all the information stored in the Peer-to-Peer network – **CONSENSUS**

Jan 2016

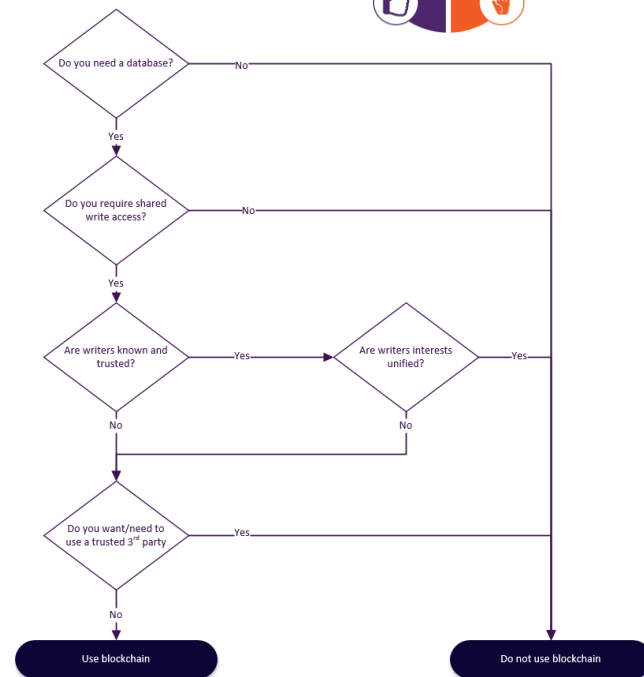
Nov 2017



Blockchain Principles



- Different levels of access to the information- predefined structure and **Smart Contracts**
- Once the data is validated, the smart contract automatically triggers a chain of events: acceptance of products (supplier - customer), payments, invoicing, stock update, resources releasing, etc.
- Transaction Record available to all participants





Blockchain in the Meat Supply Chain

FARM TO FORK – RED MEAT PROVENANCE To-Be Journey Map

IBM



Steve
Farmer - Devon, South West England
A young farmer, passionate about
farming.



David
FBO - Owner of King's Slaughterhouse
An experienced operator running a
medium-sized family business.



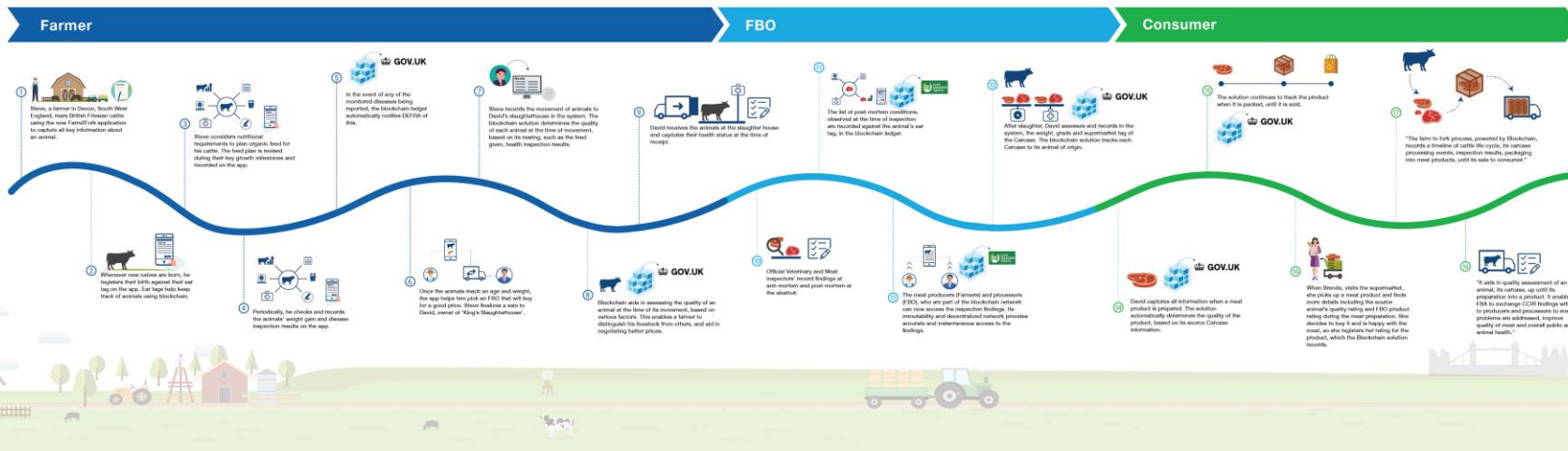
Brenda
Consumer
Privacy shopper for family's needs,
purchases family meats.



UK FSA
The Food Standards Agency (FSA) is
responsible for food safety and food
hygiene across the UK.



Defra
Defra Network Organisations
The Department for Environment,
Food and Rural Affairs (Defra).



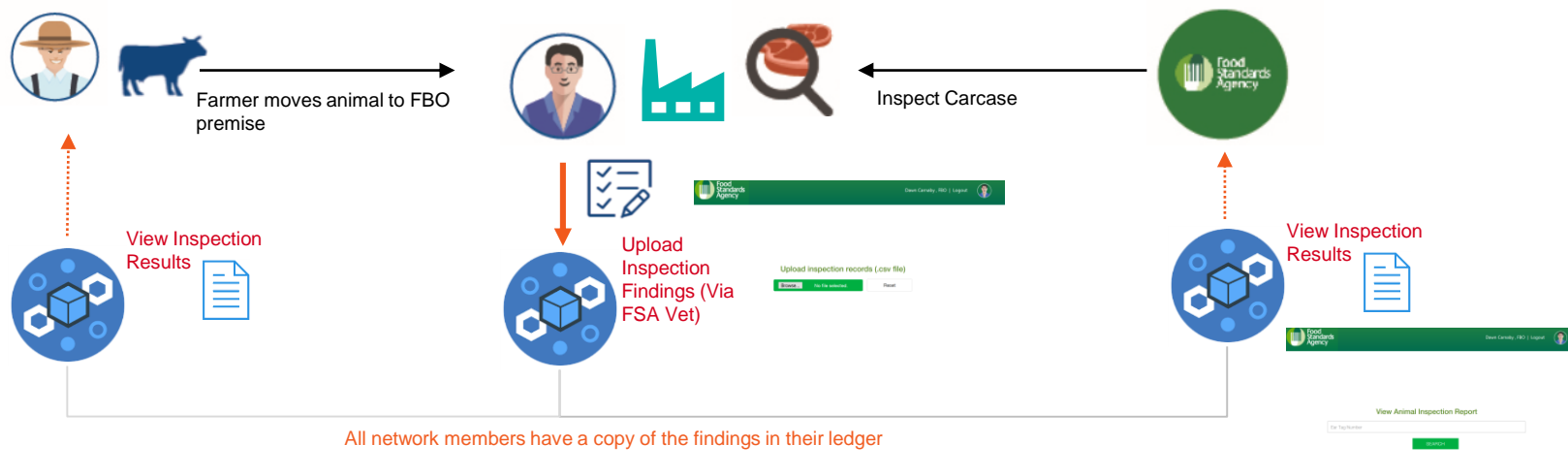
Collection and Communication of Inspection Results (CCIR)



Current Process

- FSA Meat Inspectors inspect the carcass and enter any conditions noted into the FBO system
- At end of day FBO prints a report of inspection results and the FSA team re-keys the aggregate data into IRIS
- The FSA Vet checks and approves the data entered on IRIS
- FSA can run aggregated reports of health conditions for each FBO location

CCIR Blockchain Pilot



Following development, system gone live at test abattoir last week

A Word on Data Governance



- **Rules set by the owners and participants of the ledger to safeguard their private interests.**
- Two sets of rules/codes that control the operation of digital technologies:
 - Legislative** Code – Law and Regulations Framework
 - Technical** Code - Rules that determine the operation of the Algorithms Encoded by the Software (requires unusual mixes of skills)
- Aims to protect the participants and stakeholders- **ensure the system is resilient to systemic risk or criminal activity.**

Alerts data

ALLERGY



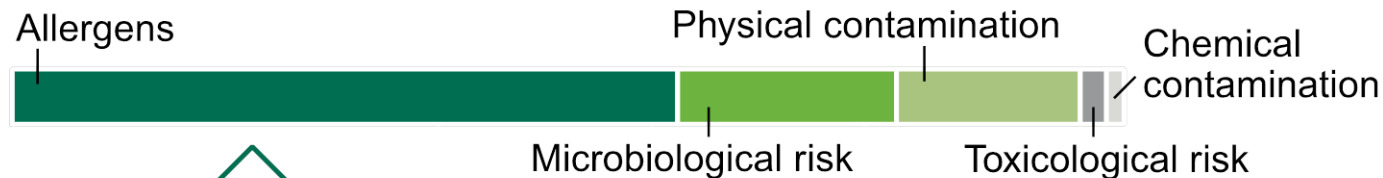
“Proper labelling stops him from having an allergic reaction”

“Life can be quite challenging because you have to be on the lookout”



“It’s a matter of health and a matter of life and death”

Number of incidents by type



Number of allergens by type:



API for Automation

ALLERGY



Why is this important?

ALLERG
Y

“The Anaphylaxis Campaign is delighted to be working with the FSAIn a recent survey of our members, the provision of food allergy alerts was ranked as the number one benefit of membership.....anything that can improve the timing and the efficiency of the process of delivering the alerts is welcomed.”

News and alerts

Stay up-to-date with food and allergy alerts, FSA news and consultations

[Subscribe to news & alerts](#)

Latest alerts

ALLERGY ALERT

Final results from the third annual retail survey show campylobacter levels continue to fall

18 October 2017



FOOD ALERT

Final results from the third annual retail survey show campylobacter levels continue to fall

18 October 2017



FOOD ALERT

Final results from the third annual retail survey show campylobacter levels continue to fall

18 October 2017



ALLERGY ALERT

Final results from the third annual retail survey show campylobacter levels continue to fall

18 October 2017



[All alerts](#)

Thank You

Prof. Guy Poppy
Guy.Poppy@food.gov.uk

Between the Lines

In this issue

2 Testing Blockchain



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Testing Blockchain

The FSA has established its own blockchain in record time – but what does it mean? FSA vet, [Section 40](#), currently working in Information Management, tells us more.

In short, blockchain is a continuously growing list of records called blocks, which are linked and secured. It's another way of collecting data – but the data in the chain cannot be altered without leaving an audit trail.

The FSA saw huge potential in this technology to improve transparency across the food supply chain and improve the Collection and Communication of Inspection Results back to farmers, which is a legal requirement.

Post-mortem inspection findings are currently inserted into a system by meat inspectors working on the line. For digitally

enabled plants at the end of the day the food business operator prints a report for the FSA team to duplicate the information into another database – IRIS.

We have run a pilot scheme where the food operator, through their Management Information software, will upload the information into the blockchain, after Official Veterinarian validation. The platform will automatically generate reports for all the parties involved – the operator, FSA and farmer.

This pilot will avoid the need for double data entry. It means that not only will the last owner of an animal have access to the report, but also all owners during the animal's lifetime.

The aim is not just to communicate the inspection results but also to provide easy access to a 'smart report' for farmers, helping them to



improve both animal health and welfare standards and to make better and more cost-effective decisions. This could potentially cut down on animal disease and make food safer.

The first pilot is in collaboration with Dawn Meats in East Yorkshire and is likely to run for a few more weeks. More pilots will follow. It is likely that similar services will be delivered to other species and possibly different types of premises, such as cutting plants.

This is the first time a blockchain system has been deployed in a regulatory environment – so we're all very interested to see how the pilots work. We'll keep you updated.