HSE's Smarter Regulation Sandbox

HSE

Safetytech Accelerator

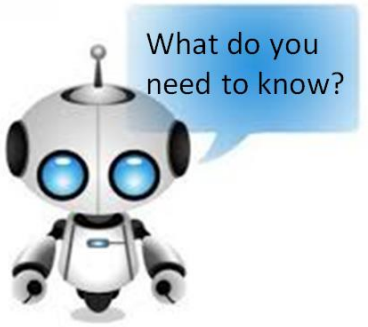
DISCOVERING SAFETY

Background to HSE's Smarter Regulation Sandbox initiative

- Collaboration between HSE & its Discovering Safety Research Programme and the SafetyTech Accelerator
- Supported by a research grant from the Government Office for Technology Transfer (part of the Dept for Science, Innovation and Technology) and its Knowledge Asset Grant Fund
- Opportunities for smarter regulation, regulatory compliance and improved health and safety performance
  - *by making relevant digital information/knowledge assets machine readable*
  - *and leveraging emerging digital technologies*
- 14-month study, running from Jan 2024 to Mar 2025
- Working closely with the Smarter Regulation Directorate (part of the Dept for Business and Trade)
  - *SRD Open Regulation Platform as a starting point?*
- Construction industry focussed, (initially)

HSE | DISCOVERING SAFETY | Safetytech Accelerator | Government Office for Technology Transfer

- **Regulatory requirements**, e.g. HSE regulations, incl. new regulations, other regulations, incl. regulated by other regulators, and in other countries
- **Guidance** on how to comply with requirements, achieve effective performance, treat specific risks, e.g. HSE published guidance, HSE practical toolkits, industry guidance
- **Technical standards**, e.g. BSI, IEC, ISO, equipment, technology and people certifications, accreditations
- **Other business generated rules**, e.g. linked to insurance policies, contracts, procurement
- **Performance and compliance data**, e.g. generated through discharge of HSE's regulatory functions, routine h&s data generated by industry, compiled by industry bodies



Aims of initiative

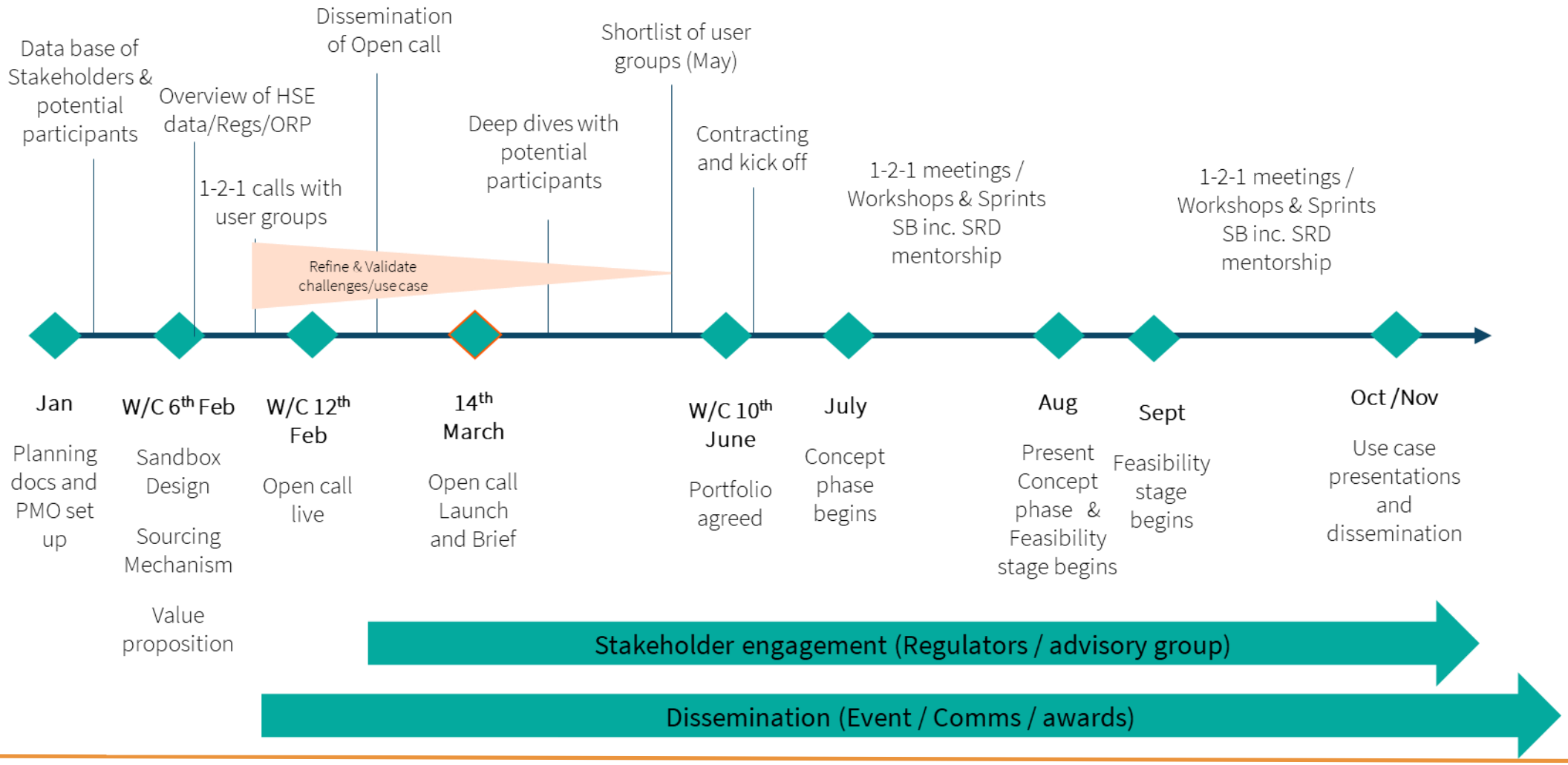
Aims to provide

- **Construction Industry** with help navigating complex requirements landscapes linked to health and safety, to improve performance, reduce regulatory burdens
- **Tech companies serving construction industry** with the opportunity to access smarter requirements information/knowledge to enable new innovative digital solutions to be developed for industry
- **Regulators such as HSE** with a safe pro-innovation environment to better understand opportunities to improve regulatory performance through innovation
- **Smarter Regulation Directorate** with the opportunity to develop use cases linked to their Open Regulatory Platform (ORP) and Open Regulation Data Standard

Support HSE in delivering on key aims in its ten-year strategy to

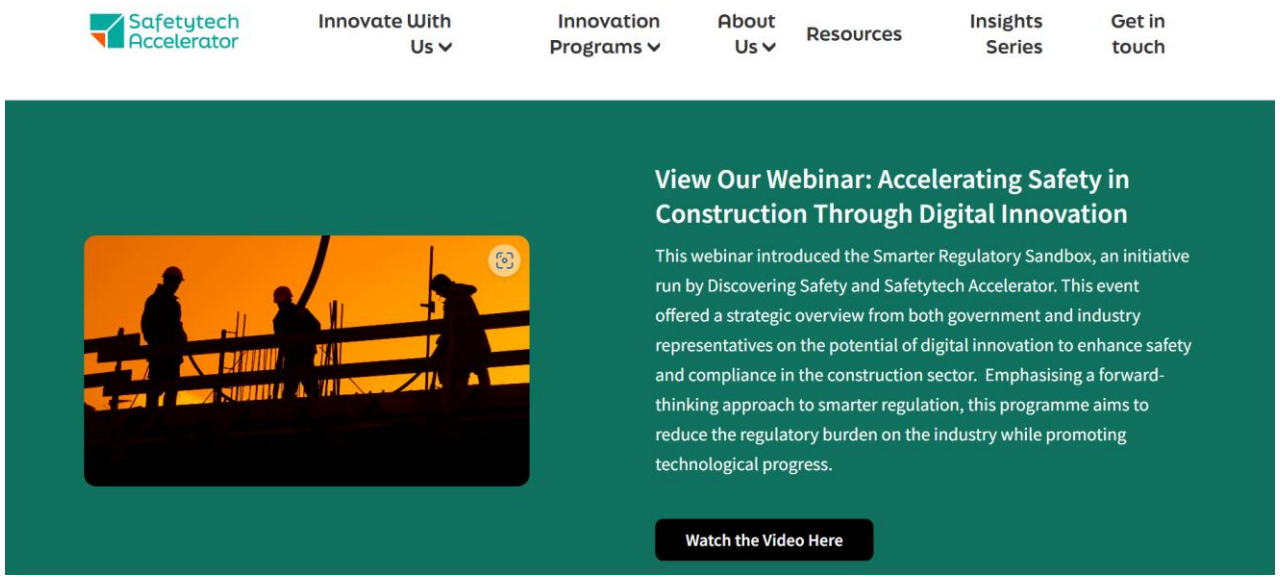
- **Maintain Great Britain's record** as one of the safest countries to work in
- **Enable industry to innovate safely**, supporting its transition to net zero

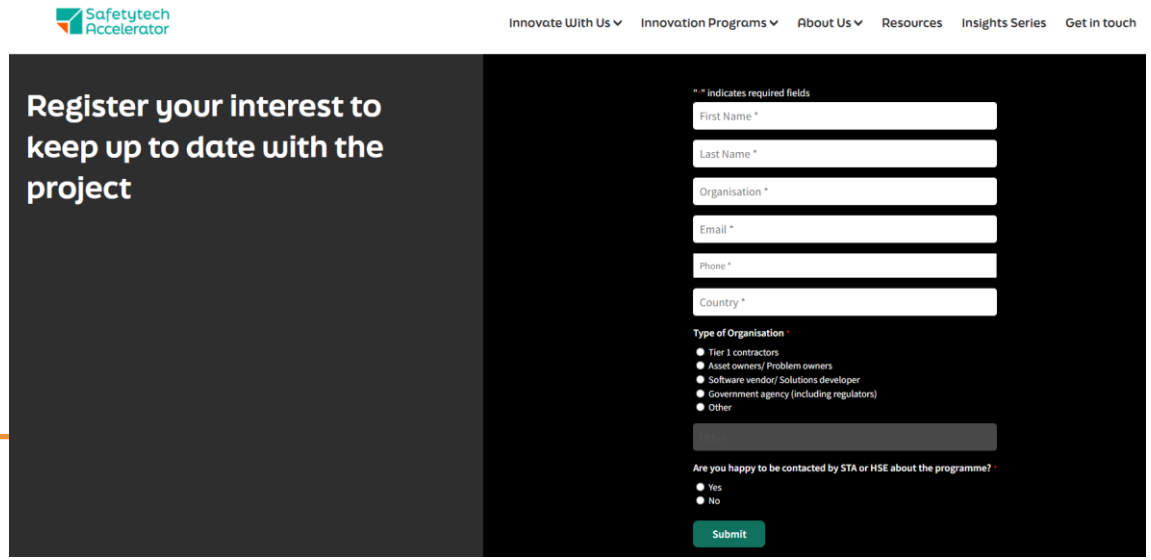
SRS Timeline



Work up of challenge areas to feed into Sandbox

- Marketing and comms activities, social media, blogs, briefing webinars
- Website set up for submissions of expressions of interest
- Targeted reach-out across existing HSE/STA contacts





Sorts of Organisations/Groups reached out to?

- ❑ Clients of construction projects
- ❑ Contractors delivering projects
- ❑ Designers/consultants for projects
- ❑ Wider construction supply chain
- ❑ Construction industry bodies and associations
- ❑ Standards, accreditation & certification bodies
- ❑ Assurance service providers
- ❑ Insurers
- ❑ Other regulators, besides HSE

Industry challenge owners, needing smart solutions

- ❑ Digital solutions providers (incl. enterprise ehs software vendors, project information management vendors, industrial safetytech vendors)

Smart solutions owners, (existing/future), to potential industry challenges

Discussions had?

- Introductory call, brief about project, aims/objectives, scope, benefits of getting involved, timescales/time commitments, ideas re potential challenge and solution areas to feed into Sandbox explored
- Second call, deeper dive into challenge/solution areas suggested in first call, work up of challenge statements for shortlisting

As of 01 May 24 –

15 expressions of interest submitted via website,

25 approaches via networks,

38 intro calls completed,

27 deeper dive calls,

11 not for them or subseq. dropped out due to resourcing constraints

Discussions had?

Some of the organisations spoken to?

Contractors –
- Colas
- BAM Nuttall
- Kier
- Ferrovial
- Murphy

Clients –
- Heathrow
- Gatwick
- EDF Energy
- Thames Water
- Severn Trent Water
- Lower Thames Crossing

Design houses, Consultancies –
- Atkins
- Bryden Wood
- Arcadis

Standards/Assurance bodies –
- BSI

Industry bodies –
- Association of British Insurers
- Construction Products Association
- Home Builders Federation h&S working group
- UK Water h&s working group

Insurers –
- LV
- AXA
- Zurich

Software vendors, Tech companies –
- STC Insiso
- SysMax
- Pathfindr
- Ockham Hydrogen
- Navitech
- Naviregо
- Evercam
- Pillar
- BIMSafe
- Evotix
- Notify Technology
- Oracle
- HAL Robotics
- Fyld
- Plinx
- Procore

Specific requirements cited in discussions to date – HSE related

HSE regulations and related guidance –

- Machinery safety regulations
- Provision of work equipment regulations
- Control of asbestos regulations
- Construction design and management regulations, HSE guidance for regulations, L153
- Personal protective equipment regulations, HSE guidance to regulations, HSG53, HSE RPE selector tool
- Pipeline regulations, HSE guidance for regulations, L82
- Working time regulations, HSE guidance for managing shift work, HSG256

Other HSE guidance –

- HSG47, avoiding danger from underground services
- GS6, guidance linked to working in the vicinity of overhead powerlines
- HSG65, managing for health and safety
- Risk management maturity model (RM3)
- HSG150, health and safety in construction
- Stress management standards

HSE datasets –

- HSE regulatory intelligence, incl. RIDDOR, Notices
- HSE Stress indicator tool data, industry benchmarks
- HSE Safety climate tool data, industry benchmarks
- HSE construction risk treatment database

Specific requirements cited in discussions to date – Non-HSE

Non-HSE regulations –
- Building Safety Regulations, enforced by the BSR
- UK Building regulations
- EASA (European Aviation Safety Agency) and CAA (Civil aviation authority) regulations, generally, linked to flying of drones specifically

ISO standards –
- ISO45001, health and safety management system standard
- PAS for use of connected and automated plant in construction, PAS1892, ISO for safe use of industrial robots, ISO10218
- BSI PAS 128, underground utilities detection standard

Other industry standards –
- GG104, Standards for highways, requirements for safety risk assessment
- Standards for highways, Design manual for roads and bridges (DMRB)
- Standards linked to responsible use of AI, brought together on AI standards hub

Data and information standards –
- Open Regulation Platform metadata standard
- RASE regulations mark-up framework
- ISO19650, Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM), Information management using building information modelling, Part 6: Health and safety information, PAS1192/6, Specification for collaborative sharing and use of structured Health and Safety information using BIM
- Uniclass standard h&s risk classification

Other industry datasets, knowledge assets –
- National Underground Asset Register
- Construction data trust plc

Broad categories of challenge area surfaced through discussions to date

- Navigating multiple/complex “requirements” landscapes, understanding requirements
- Going from external “requirements” to compliant internal operating procedures
- Going from compliant internal operating procedures to documentation of compliant organisational/human performance, incl. health and safety functions and workers at point of works
- Mapping performance data to specific “requirements”, to measure compliance/performance
- Benchmarking performance data against others, to measure performance
- Going from work scenarios to risk scenarios and then onto effective risk treatments, to achieve effective performance

Broad categories of solutions area surfaced through discussions to date

- Open Regulation Platform in its current form, incl. current ORP metadata standard, future iterations of ORP, incl. a more detailed metadata standard perhaps?
- Technology able to mark-up according to a metadata standard, e.g. using a Large Language Model
- Technology able to digitally encode requirements, define rules linked to different requirements, auto-create digital checklists
- Technology to support measurement of performance dynamically, in real time, e.g. IIoT, computer vision
- Technology to support mapping of performance data back to requirements
- Technology to support checking of performance against requirements, rules, e.g. through auto-checking
- Technology to support intelligent recording and organisation of project and performance data, e.g. according to key data and information standards, PAS1192/6, ISO19650/6, UNICLASS risk classification
- Technology able to convert external requirements to internal operating procedures, e.g. risk assessment method statements, management of project h&s files under CDM regulations
- Technology able to serve up relevant knowledge linked to requirements and procedures, e.g. to health and safety functions, to workers at point of works, e.g. going from work scenarios to risk scenarios, risk scenarios to risk treatments, work/risk scenarios back to external requirements and internal procedures