

# Quality Management Strategy

Quality management is a continuous process through-out the life of the Sharing Cities Programme and is an integral part of the day to day activities. The objectives of quality management are to:

- ensure that Programme outputs are ‘fit for purpose’ and produced in accordance with relevant and agreed standards (for example open data)
- learn lessons from experiences gained within and outside the Programme, and incorporate improvements wherever appropriate
- balance the need to keep everyone informed through the wide circulation of programme documents with the need to make the best use of time by selective targeting
- provide the assigned Programme Management roles with detailed responsibilities
- define and implement procedures for ensuring quality in the Programme’s delivery of the commitment and goals, such as quality reviews, inspection and testing

## 1. Programme Success Criteria

Sharing Cities has four strategic objectives:

1. **scale**: To prove that properly designed (and more common) smart city solutions can be integrated in complex urban environments to exhibit their true potential and allow for the significant scale-up and consequent increase in social, economic and environmental value.
2. **digital first**: To explore and prove the extent to which a difference can be made through adopting a digital first and data driven approach to the improvement and ‘connecting up’ of existing infrastructure, as well as the design and running of new city infrastructure. We want to drive the creation of a new set of next stage digital services which will help citizens make better choices around transport and energy efficiency, which when scaled up will enhance the city’s ability to hit key targets for mobility, housing, energy efficiency and resilience, and economic development.
3. **open-up & accelerate the market**: To understand, develop and trial business, investment and governance models, essential for the true aggregation and replication (through collaboration) of smart city solutions in cities of different sizes and maturities, in Europe and beyond. And through this to accelerate the pace by which we make transformative improvements, and enhance sustainability.
4. **share & collaborate for society**: To respond to the increasing demand for participation; to enhance mechanisms for citizens’ engagement; to improve local governments capacity for policy making and service delivery through collaboration and co-design; resulting in outcomes that are better for citizens, businesses and visitors.

These objectives are addressed through the 10 Audacious Goals;

- 1) aggregate demand and achieve wide scale deployment of smart city solutions
  - a) Addressing EU requirements;
    - i) Deploy wide-scale, innovative replicable and integrated solutions in the energy, transport, and ICT.

- ii) Create stronger links between cities in Member States with various geographical and economical positions through active cooperation
  - b) For which we have set targets;
    - i) 100 European cities engaged (2016) and 50% of these exploiting the products of the programme (2018); notably involving and proactively helping small and medium sized cities
    - ii) clearly affecting and influencing actions at a national & EU level, and exploiting links with the EIP 6-Nations commitment to strengthen national/city alignment
- 2) deliver highly relevant common and replicable innovative solutions
  - a) Addressing EU requirements;
    - i) Deploy wide-scale, innovative replicable and integrated solutions in the energy, transport, and ICT.
    - ii) Create stronger links between cities in Member States with various geographical and economical positions through active cooperation
  - b) For which we have set targets;
    - i) deliver and actively support into common ≈10 repeatable ‘tools and frameworks’
    - ii) deliver ≈10 common replicable solutions .., learning from worldwide leading practices from “link cities”
    - iii) run 30 creative events with scale-up SMEs across the core and follower cities to drive innovations (a process measure)
    - iv) support the development of ≈5 rapid-delivery guidelines and standards involving (inter)national standards bodies
- 3) attract quantum external investment
  - a) Addressing EU requirements;
    - i) trigger large scale economic investments with the repayment of implementation costs in acceptable time lines (to facilitate the bankability of the projects)
  - b) For which we have set targets;
    - i) trigger >€500 million external investment as a result of the programme
    - ii) work with EIB to support the replication of the EIB/Belfius smart city fund model in UK, Italy, Portugal
    - iii) set up (a) smart cities fund(s), exploiting the funding London model (WP7) to support local economic growth
    - iv) test and prove 5 new business models applicable for the various measures, and package for repeatability (e.g. smart lamppost, e-mobility network management)
    - v) aspire to show 3 examples of disinvestment (or re-diverted investment) from conventional to ‘digital first’ approaches (e.g. road infrastructure cancelled through car sharing)
- 4) make acceleration in uptake of smart city solutions real
  - a) For which we have set targets;
    - i) cause 3 disruptive business models that evidence acceleration in uptake, to be created in the lifetime of the programme
    - ii) speed the uptake (& scale) of a few select replicable solutions (e.g. refurbishment; smart lampposts; eV; EMS), collaborating with the EIP; reducing typical implementation cycle times
- 5) deliver 3 role-model low/near-zero energy efficient districts
  - a) Addressing EU requirements;

- i) increase the energy efficiency of districts and of cities and foster the use of renewables and their integration energy system and enable active participation of consumers
    - ii) reduce the energy costs
    - iii) decarbonise the energy system while making it more secure and stable
    - iv) reduction of energy bills for all actors, especially for citizens and public authorities
  - b) For which we have set targets;
    - i) provide clear local support to achieve or exceed 20:20:20 national targets
    - ii) make savings in energy bills of €600,000 for the 15,000 residents in the districts
    - iii) demonstrate the feasibility of 5.9KWhr/year energy consumption reduction in existing residential buildings
    - iv) converge and integrate energy and mobility strategies within each core city/district
    - v) improve security of supply and stability of supply clearly affecting and influencing actions at a national & EU level, and exploiting links with the EIP 6-Nations commitment to strengthen national/city alignment
- 6) shift the thinking irreversibly to de-carbonised renewables
  - a) Addressing EU requirements;
    - i) increase the energy efficiency of districts and of cities and foster the use of renewables and their integration energy system and enable active participation of consumers
    - ii) decarbonise the energy system while making it more secure and stable
    - iii) increase air quality
  - b) For which we have set targets;
    - i) clearly demonstrate to public decision makers in the districts the real value, such that they influence businesses and regulators
    - ii) 10% of total energy from renewables, sufficient to disrupt the current model
    - iii) save 5.9KWhr/yr energy
- 7) shift the thinking irreversibly to new models of e-mobility in the districts
  - a) Addressing EU requirements;
    - i) Increase mobility efficiency with lower emissions of pollutants and CO<sub>2</sub>
  - b) For which we have set targets;
    - i) demonstrate clear shift in citizen thinking as regards choice of mobility, with 1-% shifting to eVs
    - ii) create sufficient change that it will deliver sustained behaviour within the districts
    - iii) promote Low Emission Zones (LEZ) that reduces road pollutants by 1.1 tonnes NO<sub>x</sub>/PM<sub>10</sub> % (European Air Quality Directive 2008/50/EC)
- 8) make real the notion of citizen participation
  - a) Addressing EU requirements;
    - i) Increase the energy efficiency of districts and of cities and foster the use of renewables and their integration energy system and enable active participation of consumers.
  - b) For which we have set targets;
    - i) prove the active participation of 50% of the 15,000 affected residents (citizens) of the buildings under renovation
    - ii) increase the number, and importantly the range, of citizens engaged in the co-design of new shared services

- iii) receive extraordinary feedback from a portion (5%) million visitors to Greenwich Peninsula, Downtown Lisbon, Porta Romana
  - iv) achieve executive level commitment to change from 5-10 significant-scale businesses in the three districts to support a shift in habits of them, and their staff
  - v) implement a District Bond Scheme in all three core cities
- 9) exploit 'city data' to genuinely prove its value
  - a) Addressing EU requirements;
    - i) Deploy wide-scale, innovative replicable and integrated solutions in the energy, transport, and ICT.
    - ii) Create stronger links between cities in Member States with various geographical and economical positions through active cooperation
  - b) For which we have set targets;
    - i) double data store visits in the three city/districts by 2020
    - ii) ensure all districts publish data to ODI (or equiv.) standards
    - iii) clearly improve the quality of the data in the areas of energy and mobility
    - iv) demonstrate real user value from city data stores in support of decision making, automated operations, SME start-up
    - v) demonstrable alignment between EC-funded major programmes and Sharing Cities
    - vi) 100 European cities engaged (2016) and 50% of these exploiting the products of the programme (2018); notably involving and proactively helping small and medium sized cities
- 10) strengthen local scale-up businesses in (at least) the 3 cities
  - a) Addressing EU requirements;
    - i) Increase quality of life by creating local jobs (that cannot be delocalised) in cities
  - b) For which we have set targets;
    - i) create >100 new jobs in three demonstration areas, in related sectors
    - ii) 5 SMEs created & scale-up businesses in the 3 cities and 5 outside

## 2. Aspects of the programme subject to quality assurance and control and the quality criteria that will apply

Work Package leaders are responsible for their work package quality control mechanisms. However, the Quality Manager will deliver and maintain this statement as a guide for ensuring internal quality of deliverables and management procedures. All deliverables will be reviewed internally by the Work Package leader of the particular work package and a final review by the Quality Manager prior to the deliverable being sent, via the Programme Board, to the INEA or made available (either publicly or to the rest of the consortium). Deliverables (including products and solutions as components of deliverables) may also be tested by reference from a Work Package Lead to the Technical Design Authority or in the case of innovation or replication to the Advisory Group (via the Programme Board).

The standards that will be applied include;

1. Compliance of the deliverable against the four strategic objectives and the ten audacious goals; the deliverables in work packages will be assessed against four levels 1) prime 2) key 3) support 4) basic. Those work packages that are prime must overtly demonstrate that the deliverable realizes the objective or goal. Those that are 'key' must

demonstrate that the deliverable achieves the objective or goal. Those that are 'support' must show how they contribute to another deliverable that achieves the objective or goal. All deliverables must meet the basic standard of compliant with the Grant Agreement description and inherent technical functionality, i.e. they must work.

2. Compliance of the deliverable against relevant standards. For example, but not limited;
  - i. WP3 open data standards
  - ii. WP4 platform standards
  - iii. WP7 finance standards

	WP2: People	WP3: Place	WP4: Platform	WP5: Replication	WP6: Comms	WP7: New Business Models
SO1: Scale	Support	Key		Prime		Key
SO2: Digital First		Key	Prime			
SO3: Accelerate Market			Support	Key		Prime
SO4: Share	Prime		Support		Key	
AG1: Aggregate Demand & Deploy on Wide		Support	Support	Prime	Key	Key
AG2: Common & Replicable Solutions	Prime	Key	Key	Key		
AG3: External Investment			Support	Key	Key	Prime
AG4: Acceleration of Uptake		Prime	Support	Support		Key
AG5: Near-zero Energy Efficient Districts	Prime	Key				
AG6: Decarbonised Renewables	Key	Prime				
AG7: Shift to eMobility	Prime	Key				
AG8: Citizen Participation	Prime		Support		Support	
AG9: Prove the Value of City Data	Key	Key	Prime			Support
AG10: Strengthen Local Scale-up	Support	Support				Prime

### 3. Roles and Responsibilities for Quality Management

Quality Manager – A senior officer with responsibility to review deliverables (products and solutions) from Work Package Leaders before acceptance for submission to the EU. Responsible to carry out a quality review and to make a recommendation for acceptance or to ask for clarification or to request revision of the product to address quality issues. The Quality Manager may seek the opinion, advice or support of the Technical Design Authority or the Advisory Group where a deliverable requires technical expertise in order to assess quality.

Programme Director – Can be referred to in order to consider whether the output quality is sufficient to achieve the Programme outcomes. Will provide cover in the absence of the Programme Manager.

Programme Manager – Is responsible for managing the submission of deliverables to the EU and will identify if a deliverable constitutes a product or solution that requires quality assurance. In the case of routine and regular deliverables such as standard format reports these are unlikely to require quality assurance.

Work Package Lead – Is responsible to refer a deliverable to the Programme Manager for quality assurance where the product or solution has both function specific and defined requirements for acceptance within the programme or for delivery in contribution to the Programme outcomes. They may also refer the deliverable, in the first instance, to the Technical Design Authority for their assessment, and, in the case of innovation or replication to the Advisory Group (via Programme Board).

#### **4. Quality management activities, their triggers and guidance on their use**

The requirement to manage a deliverable for quality is triggered during definition, design and build by a Work Package Lead or the Technical Design Authority. In definition and design the Work Package Lead will identify and record any applicable quality standards, e.g. Programme requirements (both strategic and specific), and industry standards.

Quality management will be considered for any deliverable. Deliverables that are routine and standard will not require quality management unless there is an apparent defect on the deliverable

In addition the following events will trigger the quality management process;

- Quality Reviews of specific project outputs
- Readiness reviews prior to transition being approved
- Change Controls

Some triggers may be time-based (e.g. programme audits to ensure compliance with corporate Programme Management standards). Others will be linked to events and milestones in the Programme: e.g. the SRO/Sponsoring Group might wish for a review to be carried out prior to any decision concerning a deliverable designed for replication.

#### **5. Thresholds and mechanisms for escalation of quality issues**

Work Package leads may bring proposals for quality standards for a Work Package deliverable to the Technical Design Authority at any time, but ordinarily will define standards during definition or at the first part of design.

The Technical Design Authority will always request a statement of quality standards when considering quality, whether the deliverable is referred by a Work Package Lead or the Quality Manager. When requesting advice from the Advisory Group (via the Programme Board) the Authority will provide a report addressing the quality standards and compliance.

#### **6. Adherence to Standards**

The following is a list of work areas that will be developed to describe the relevant standards. The Quality Manager, with support of the Technical Design Authority, may update and re-issue this list from time to time, following consultation with Work Package Leads and with the support of any relevant technical expertise of a Consortia Partner. In all cases the Grant Agreement and the Consortia Agreement are to be complied with above all other requirements.

1. Design of/change to operational processes and procedures (particularly where they are accredited by an external body such as ISO, UKAS, IIP etc.)
2. Infrastructure
3. Presentation of corporate image
4. Communication with external bodies
5. Web site content management
6. Data and Information Management
7. Configuration management