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The Future Of Smart Ticketing In Scotland

A Consultation

MINISTERIAL FOREWORD FROM MINISTER FOR TRANSPORT AND THE ISLANDS, HUMZA YOUSAF MSP



Smart ticketing and payment are exciting parts of Scotland's future public transport service and I am pleased to present this consultation paper asking for your views on how we should continue to develop smart ticketing in Scotland.

There has already been considerable progress in delivering smart ticketing on public transport in Scotland. Our National Concessionary Travel Scheme has been fully smart since 2010, the Glasgow subway fully smart since 2013 and a number of bus companies already offer a range of smart products on their services. We also have successful multi operator smartzones in Aberdeen and Dundee, and bus operators have committed to deliver similar smartzones in Glasgow and Edinburgh.

In addition we are working with all transport operators to introduce a national e-purse in the near future and the Scottish Government has set both ScotRail and CalMac Ferries Ltd very challenging smart ticketing targets as part of their contractual obligations.

However, I would like to see even more progress. Our vision is that all journeys on Scotland's bus, rail, ferry, subway and tram networks can be made using some form of smart ticketing or payment, and this consultation focuses not only on how we achieve this, but sustain and build upon it as new technology evolves and matures.

This vision highlights our manifesto and Programme for Government objectives for a more connected, sustainable Scotland.

We believe that we must put in place robust ways of continuing to improve the smart offering in Scotland to meet passenger expectations, whether regular users or not, whether residents of Scotland or visitors, as part of delivering a public transport network that is fit for the 21st century - one that we can truly be proud of.

I look forward to receiving your views.

Humza Yousaf
Minister for Transport and the Islands

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A. Responding to this Consultation

About this Consultation

- 1.1 Consultation is an essential part of the Scottish Government's policy making process. It gives us the opportunity to seek your opinions. This Consultation sets out the issues under consideration and asks you questions about what we are proposing. After the Consultation is closed we will publish responses where we have been given permission to do so.
- 1.2 Responses are analysed and used as part of the policy making process, along with a range of other available information and evidence. Responses to this Consultation will help to future of smart ticketing in Scotland.

Deadline

- 1.3 The Consultation closes at midnight on 05 December 2017.

How to respond

- 1.4 To encourage wide participation, the Scottish Government has created a number of ways for you to engage in the Consultation. You can respond online, by email or by post.
- 1.5 The Consultation will also be available in alternative formats on request, including Large Print, Braille and Easy Read. In addition to publishing this Consultation document, we have also produced an information leaflet which can be downloaded from the Transport Scotland website:-
<https://www.transport.gov.scot/>

Respond Online

- 1.6 To respond online please use the Scottish Government's Consultation Hub, Citizen Space at <http://consult.scotland.gov.uk/>. You can save and return to your response at any time while the Consultation is open. But please ensure that your response is submitted before the Consultation closes at midnight on 05 December 2017.
- 1.7 You will automatically be emailed a copy of your response after you submit it. If you choose this method you will be directed to complete the Respondent Information Form. The Respondent Information Form lets us know how you wish your response to be handled, and in particular whether you are happy for your response to be made public.
- 1.8 You can also complete the response form at Annex A, and either scan this and send it by email, or send it by post to the address given below.

Table of response methods

Online	You can use the response form on the Scottish Government's Consultation Hub, Citizen Space at https://consult.scotland.gov.uk/transport-scotland/smart-ticketing-in-scotland
Email	Send us your response in an email to SmartTicketingConsultation@transport.gov.scot Please include the Respondent Information Form.
Post	Send your responses in English to: Smart and Integrated Ticketing Team Transport Scotland Buchanan House 58 Port Dundas Road Glasgow G4 0HF Please include the Respondent Information Form

1.9 With each of these methods you need to include your Respondent Information Form because this lets us know how you wish your response to be handled, and in particular whether you are happy for your response to be made public.

1.10 You can find this in Annex A below.

Next Steps

1.11 After the Consultation has closed we will analyse all the responses received and use your feedback to help inform the development of future rules and guidance on the National Concessionary Travel Scheme. Where permission has been given, we will make all responses available to the public at <https://consult.scotland.gov.uk/>. The responses to the Consultation and analysis will be published later this year.

Need assistance?

1.12 If you need support in answering this Consultation or alternatively have a query about the Consultation process, or a complaint about how this Consultation has been conducted you can send your query by email to SmartTicketingConsultation@transport.gov.scot or by writing to:

Smart and Integrated Ticketing Team
 Transport Scotland
 Buchanan House
 58 Port Dundas Road
 Glasgow
 G4 0HF

B. What is Smart Ticketing?

1. Smart ticketing is an important element of a modern public transport system and is increasingly prevalent in major cities and countries around the world.
2. For the purposes of this document smart ticketing means an electronic travel ticket which can be loaded onto a micro-chipped smartcard or mobile phone.
3. The document will also refer to smart ticketing *systems* which means the infrastructure – both software, and hardware such as ticket machines –used to manage smart ticketing.
4. The Scottish Government intends to introduce an e-purse in Scotland and this can be defined as; the store of monetary value on a smartcard which can be used in the same way as cash to pay for travel.
5. The document will also explore other forms of smart payment, for example, using a contactless bank card to pay for travel, and mobile apps which may, for example, involve a digital representation of a travel ticket.
6. Finally, there are references to smart ticketing *schemes*, which may involve single operators or several operators, and a single mode (eg bus) or several modes (eg bus, rail, ferry).
7. A glossary is included at Annex B, to explain not only the acronyms and organisations referred to throughout this consultation, but also to explain some of the key terms used.



8. Some successful examples of smart ticketing include:

Scotland-Wide Free Bus Travel for Older and Disabled People

When Scottish Government commenced this scheme in 2006, a commitment was made to equip every bus operator in Scotland with smart enabled ticketing equipment and provide all eligible residents with a smart card to access the scheme.

Transport Scotland funded the entire rollout of around 7,000 ITSO smart ticket machines between 2006 and 2010, covering almost every current operator of local bus services in Scotland.

Currently, over 1.3m eligible residents of Scotland use a product loaded onto their **saltire**card to access the scheme, making around 145M smart journeys each year.

OV-Chipkaart (Netherlands)

The OV-chipkaart is a contactless smartcard system, essentially an e-purse, for use on all modes of public transport across the whole of the Netherlands. The OV-chipkaart is available in disposable and reusable forms to suit most passengers, and is now widely used for travel in the Netherlands with good levels of passenger satisfaction.

Leap Card (Ireland)

The Leap card is a successful smart ticketing scheme on bus, tram and rail services launched initially in and around Dublin, and now being extended across the rest of the country. It is a smartcard that can be used to store prepaid tickets (singles, weekly, annual and monthly) as well as top up credit and pay as you go for journeys on a number of rail, tram and bus operators. There are now over 2 million users.

The transport operators are a mix of state owned and private companies. Prior to Leap being introduced, there were three non-compatible ticketing schemes for travel around Greater Dublin.

To ensure competitive value, capping is applied (for example max €10 each day across all services, plus other multiple journey caps) in addition any one journey using two or more modes gets a €1 discount, and journeys bought using the Leap card are cheaper than paper or cash bought tickets. The initial purchase of the card is €10, however this comes with a €5 credit on it.

9. The Oyster scheme in London is also very successful but, for a range of financial, technical and operational reasons, cannot readily be replicated in other parts of the UK. This is explained in more detail in paragraphs 81-84.

C. Benefits of Smart Ticketing

10. The Smart and Integrated Ticketing Business Case produced on behalf of Transport Scotland by PWC in March 2011¹ found that there are a number of benefits for users, transport operators and society and these are summarised below:

For Passengers

11. The use of a common smartcard across transport modes offers choice in how travellers pay for their travel which means that travellers do not need to carry money for the purchase of the ticket.
12. The common *saltire* card brand means that users and operators can clearly identify cards that can be used to access travel in Scotland.
13. Travellers are able to load travel products and/or credit onto their smartcard in advance of travelling, speeding up boarding times and reducing queuing.
14. Smartcards are hard to replicate and can be blocked when they are reported lost or stolen, with the potential for any residual cash balance to be refunded.
15. Operators would be able to run their own loyalty schemes and offer ticket types to suit individual customers' needs.
16. It will be possible to top-up some smart products on the mode of transport or at bus or rail stations, or even remotely eg via home PC or mobile phone.
17. In the longer term, smart tickets should enable operators to offer a more flexible range of products to travellers that are better suited to the way people work and travel. ScotRail, for example, have already recognised this with their smart flexi-pass.

For the Operator

18. Operators will gain access to a cost-effective, efficient and trusted service through which they are able to sell their products and receive payment while increasing revenue through growing the overall market as travel becomes easier to access.
19. Smart ticketing can also help manage fraud with resultant proportionate savings. The move to smartcards for the National Concessionary Travel scheme resulted in significant savings through fraud reduction, demonstrating the potential to utilise travel data to identify, manage and reduce fraud.

¹ <https://www.transport.gov.scot/publication/smart-integrated-ticketing-report-for-scotland/>

Furthermore, data collected via the smart tickets can be analysed to identify suspicious patterns. This information can then be used to prevent, detect and address fraudulent travel.

20. The access to data that is enabled through smart ticketing also has other benefits. The data should enable operators to greatly enhance the knowledge they have of their customers preferences and therefore enable them to improve customer relationships and develop marketing opportunities.
21. Access to data on the use made of transport by the traveller is a key benefit in respect of transport operators, who generally tend to have a more limited relationship with their core customers compared to other retail operators. Limitations in this knowledge may be currently preventing them from maximising their markets, increasing loyalty and/or tailoring services to meet core customer needs. It should be stressed that access to any personal data is subject to appropriate safeguards and restrictions, and this aspect will also be picked up in the Privacy Impact Assessment.

For the Government

22. A single smart ticketing system to support both commercial and concessionary travel delivers economies of scale and efficiencies that will benefit both the Scottish Government and commercial operators.
23. This will also help bring about a consistent experience for passengers using smart ticketing, thus increasing the likelihood of modal shift onto public transport.



D. Policy Goal

24. The Transport Scotland Smart Ticketing Delivery Strategy, first published in October 2012² and now updated to help with this consultation, set out the vision “***That all journeys on Scotland’s bus, rail, ferry, subway and tram networks can be made using some form of smart ticketing or payment***”.
25. The UK (outside of London) has a relatively unusual approach to the organisation of public transport. In most countries around the world and indeed, even in London, most public transport operations are either owned by, or tightly controlled by the state. Here in Scotland, the Government controls only the ScotRail franchise and ferry services operated by CalMac and by Northlink. While this has some merit in other aspects of public transport delivery, it makes the delivery of the above vision for smart ticketing a degree harder.
26. So, with that in mind, delivery of the policy vision may look like:

- A common smart ticketing system across Scotland, which enables both interoperability and integration. The core interoperable system we are currently seeking to have in place is the UK standard for smart ticketing, ITSO. It is proven as a concept and much of the necessary infrastructure is already in place across Scotland, particularly for bus, rail and subway.
- ITSO smartcards being used where possible as the media for delivering smart ticketing with the ***saltire*** branding being visible on all cards
- Larger operators across all modes progressing their own smart ticketing and payment schemes, but on a common and interoperable infrastructure platform or system. This should deliver a common or similar experience for passengers
- A national and interoperable e-purse scheme that all public transport operators participate in. All of Scotland’s major public transport operators have committed to participate in the national e-purse, and Transport Scotland’s preference is that all operators, of all sizes, across all modes, participate in it. It is envisaged that the e-purse will be launched during 2018.
- A series of regional multi operator interoperable smart ticketing schemes e.g. around Glasgow, Edinburgh, Aberdeen and Dundee that all relevant transport operators participate in
- Appropriate governance arrangements to ensure that each scheme endeavours to offer a good passenger experience and, through time, as technology develops, there is an orderly migration path to new or alternative technologies for smart ticketing and payment

²<https://www.transport.gov.scot/publication/smart-ticketing-delivery-strategy/>

27. We recognise that this standard can co-exist with other solutions such as contactless bank card payment (also known as EMV), apps for mobile phones or barcodes. We are not seeking to block any of these alternatives.
28. To ensure that the vision outlined in para 24, and the multi-modal smart ticketing commitments in the Programme for Government can be achieved and sustained, there are 2 key themes that need to be further developed.
29. Firstly, based on all of the positive progress so far, we need to establish what further work will be needed to meet the vision and how and by whom this can be delivered.
30. Secondly, once this is established, we need to consider what governance mechanism is best to ensure that Scotland-wide Smart ticketing can be developed and maintained to meet evolving passenger needs. We must also continue to embrace the best technical solutions on offer while, as far as possible, future-proofing investment from public bodies and transport operators.
31. Before we can do this, we need to explore what the current situation in Scotland looks like, and this is outlined in the next section.

E. Current Status/Existing Situation/Challenges

Existing Legislation

32. We have already described the proposed national e-purse, and made reference to regional smart ticketing schemes. We are seeking views on whether public transport operators should participate in the national e-purse and in regional multi operator schemes, and how best to achieve this.
33. While there is no existing legislation covering smart ticketing, there is legislation which enables the creation of regional ticketing schemes on bus.
34. Section 28 of The Transport (Scotland) Act 2001 gives local authorities a duty to determine what ticketing arrangements should be made available on local bus services for their area. If those arrangements are not made, the local authority has a duty to seek to secure the agreement of the operators of the services in question to making those arrangements.
35. Where the local authority are unable to secure that agreement, section 29 of the same Act states that the local authority, or two or more local authorities, may make a ticketing scheme covering the whole or any part of their area, or combined area, if they consider that the proposed scheme:
 - (a) would be in the interests of the public; and
 - (b) would to any extent implement their relevant general policies.

36. While there are schemes of the type laid out above across Scotland, such as Zonocard in west central Scotland and the Grasshopper scheme in Aberdeen and Aberdeenshire, these schemes came about on a voluntary basis and did not require the use of the provisions in the 2001 Act referred to above, nor has any other scheme used these powers. Governance arrangements for these schemes also arise from voluntary agreements between the participants.

Financial Investment

37. The Scottish Government has committed financially to the delivery of smart in Scotland through:
- major investment over recent years in smart ticketing infrastructure. £37 million was spent between 2006 and 2010 ensuring that every bus operator providing commercial services in Scotland had smart ticketing equipment.
 - ensuring that delivery of smart ticketing is a central feature of both the current ScotRail franchise and the contract with CalMac for ferry operations along Scotland's west coast.
 - Investing in the provision of the public sector National Entitlement Card (also variously branded Young Scot and *saltirecard*).
38. All the major bus operators and most smaller ones have either invested in, or are committed to investing in, up to date ticketing equipment. The current ScotRail franchisee inherited a largely smart-ready infrastructure, and has therefore been able to make good progress in developing rail smart ticketing in the first years of the franchise.
39. Accordingly, relatively little additional investment is required to deliver smart ticketing throughout Scotland although it is recognised that, in relative terms, some of the investments may be significant for smaller operators or local authorities. In the main, bus operators are expected to fund their own ticket machines although Transport Scotland are currently running a series of smart ticketing challenge fund initiatives aimed at helping local authorities with the cost of upgrading ticketing equipment in respect of financially supported services.
40. Transport Scotland is also currently procuring the capability to operate and manage a national e purse, as an important Scotland-wide product within smart ticketing. Considerable effort is being made to ensure that this new offering works in a way that is not only easy for the customer, but is efficient and effective from the operators' perspective. It is envisaged that the e purse will be rolled out over the next 12 months or so, with no undue financial implications for operators, who will only have to pay a small transaction fee (as is the case for any other payment methods).

Current Situation Across Each Mode

i. Smart on Bus

41. Somewhere close to 80% of public transport journeys in Scotland are taken by bus. Bus is a deregulated market in the UK (outside of London), so operators cannot currently be compelled to introduce smart ticketing.
42. In Scotland there are around 200 operators providing local bus services. They range from a few very large operators such as Stagecoach and First to a much greater number of small operators. Many of these operators only have a few buses and are often dependent on their local authority for work, typically through contracts for the operation of financially supported local bus services or school transport services.
43. The large operators generally have some expertise and resource to develop and deliver smart ticketing, but the 190 or so smaller operators do not and mostly look to Transport Scotland for advice and support.
44. As previously noted, turning the Scotland-Wide Free Bus Travel Scheme for Older and Disabled People fully smart on the ITSO platform led to significant investment in Electronic Ticket Machines (ETMs) by Scottish Government.
45. Since 2011, it has been the responsibility of both existing and new operators to ensure they continue to have appropriate smart ticketing equipment.
46. Much of the original equipment is now nearing the end of its useful life, and needs replaced. All the major Scottish bus operators, plus most of the smaller ones have already replaced, or have plans to replace, old equipment. So, assuming remaining operators deliver on these plans, the infrastructure for bus necessary for interoperable smart ticketing will be largely in place for the foreseeable future.
47. There is also an opportunity for Local Authorities or Regional Transport Partnerships to bid to the Smart Ticketing Challenge Fund (STCF).³ This funding will support capital funding for ITSO ticketing equipment, primarily for bus services that the local authority financially supports. It should be noted that the STCF is only open to public sector bodies such as local authorities.



³ 1. The STCF is one part of the Scottish Government Low Carbon Travel and Transport Programme (LCTT) which has been awarded up to £13.9 million from the European Regional Development Fund (ERDF) 2014-2020 Programme. The LCTT aims to encourage a modal shift to forms of transport with lower carbon emissions and is available for projects which are delivered up to December 2018.

48. Some commercial bus operators have also developed their own successful smart ticketing offerings, for example:
- Stagecoach has progressively introduced ITSO smart ticketing across their entire network of services in Scotland, stretching from Orkney to Dumfries & Galloway.
 - Lothian Buses has had a smart ticketing scheme in place since 2002, although it is a proprietary system and is therefore not interoperable with any other scheme or card.
49. In March 2016, Scotland's five largest bus operators – Stagecoach, First, Lothian Buses, McGills and Xplore Dundee – made a series of smart ticketing related commitments to the then Transport Minister. These were:
- The launch of interoperable, bus-to-bus, smart ticketing across Scotland's largest cities (Aberdeen, Dundee, Glasgow and Edinburgh) and the surrounding areas
 - support for the introduction of a single standard national e-purse
 - support for a common saltirecard logo displayed on the various smartcards that individual operators use
 - a plan to see EMV contactless bank card technology installed on buses in Scotland by 2022

Some progress has been made on delivering on these commitments, but there is still more work to do.

ii. Smart on Rail

50. The ScotRail franchise is let by Scottish Ministers, and covers all passenger rail services in Scotland apart from services by other operators that cross the Anglo-Scottish border (Virgin, East Coast, TransPennine, Cross Country and the Caledonian Sleeper). The current franchise was awarded in April 2015, to Abellio ScotRail Limited (ASL), and runs for 7 years with an option to extend to 10.



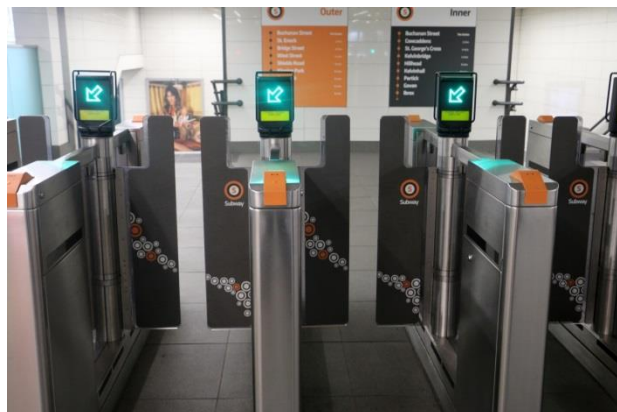
51. There are a series of smart ticketing requirements within the franchise agreement between the Scottish Ministers and ASL, which are binding on ASL. These include:

- The majority of ticket types will be smart by 2017. All ticket types will be available on smart by 2019, including some multi-modal tickets. Additional benefits for ScotRail Smartcard season ticket holders include discounted season rail tickets purchased online.
 - ASL has committed to achieving a 60% uptake for the majority of ticket types and a 65% uptake for all ticket types, by 2019 and 2021 respectively.
52. While the franchise process should ensure that Scotland's railway is at the heart of the delivery of smart ticketing in Scotland, ASL only has limited ability to ensure delivery of multi modal smart ticketing products, where it has to get co-operation from, for example, bus or ferry operators.
53. The other Train Operating Companies (TOCs) providing services that call at Scottish stations e.g. Virgin East Coast, Virgin West Coast, Cross Country and Trans Pennine (under franchise agreements with the UK Government), are pursuing a similar but not identical approach to smart ticketing in terms of focus and timescale. Scotland is further ahead on the implementation of smart ticketing on rail than the rest of the UK outside of London, and details are still emerging around precisely what other TOCs will do, and by when.
54. It is anticipated that suitable agreements to participate in interoperable schemes can be reached with other TOCs via the close working relationship between the Scottish and UK governments.
55. The Caledonian Sleeper franchise, also let by Transport Scotland, has no binding commitments around smart ticketing and at this stage there are no plans to change this, as most journeys are pre-booked singles or returns. However, this approach will be kept under review.
- iii. Smart on Ferry
56. There are several ferry operators within Scotland, including CalMac Ferries Ltd, Serco Northlink Ferries, Shetland Ferries, Orkney Ferries, Pentland Ferries and Western Ferries. Both CalMac and Serco operate services under contract with the Scottish Ministers, while Shetland Ferries and Orkney Ferries – both relatively large operations – are Council owned and operated. Pentland Ferries and Western Ferries are privately owned commercial operations, and there are also a number of other small local authority and commercial operations.
57. There are some unique challenges associated with smart infrastructure on ferry services. Firstly, the front end devices such as ticket machines typically used in bus and rail operation are not robust enough for operation in the marine environment. There is only one supplier of a suitable handheld ticket device with an ITSO certificate, which was only issued in August 2017, so we are still at a very early stage of trialling ITSO ticketing for ferries.

58. Secondly, ferry operation – unlike bus and rail – caters for cars and freight and also has a lot of pre-booked traffic. Certainly on the busier routes, where pre-booking is the norm, the operation is more akin to air travel than bus or rail. A central booking, reservations and ticketing system is integral to the smooth running of a larger ferry operator’s network, and is an important additional component of the smart ticketing infrastructure for ferry operations.
59. Finally, unlike with bus and rail where there is already wide-spread use of smart ticketing, in particular for the concessionary travel schemes on bus and season tickets on rail, ferry will be starting from a point where interoperable smart ticketing is completely new. This will require close engagement with the relevant operators and local authorities to ensure that appropriate support is available to introduce the infrastructure required.
60. As a result, there is some uncertainty about how quickly ferry services might be able to adopt ITSO smart technology, and whether it is either practical or desirable to extend smart ticketing beyond foot passengers.
61. Additionally, for those ferry operators such as Pentland Ferries, Western Ferries and local authority services, which are not contractually committed to Scottish Government, it will be important to identify how participation from these operators can be achieved.
62. At this stage it is not proposed that services which do not both start and finish in Scotland, for example, Cairnryan to Northern Ireland, are included in the scope of the consultation.

iv. Smart on Subway

63. SPT (Strathclyde Partnership for Transport) has undertaken a substantial modernisation programme for the Glasgow subway, largely funded by the Scottish Government. As part of this programme SPT took the opportunity to upgrade the subway ticketing system to be fully ITSO smart, and are now working closely with Abellio ScotRail to ensure smartcard interoperability between subway and rail. This will include the ability to load SPT subway tickets on ScotRail smartcards, and to load available ScotRail smart tickets on the SPT ITSO smartcard (the Bramble Card).
64. The Glasgow subway is already ITSO compliant and fully smart, and the issues are therefore around how it becomes fully interoperable with adjoining modes like bus and rail.



v. Smart on Tram

65. The Edinburgh tram is an integral part of the local transport network in Scotland's capital city. It is often the first point of contact with the Scottish public transport system for visitors arriving at Edinburgh airport.
66. The tram network in Edinburgh is operated by Edinburgh Trams Ltd on behalf of Transport for Edinburgh (TfE). The TfE strategy for delivery 2017-2021 confirms support for the continued development of fully integrated, smart, electronic ticketing systems.
67. Edinburgh Trams smart ticketing ITSO platform is used to deliver the local concessionary travel scheme for City of Edinburgh residents using the **saltire**card on the tram network. Although their system is ITSO certified to the latest version of ITSO it is understood that some elements require upgrade before it is fully interoperable with rail and bus. While it works with the proprietary Lothian Buses Ridacard, as previously noted this is not an ITSO system and is therefore not interoperable with other smart ticketing initiatives across Scotland.

vi. Smart on Other Transport Modes - Air

68. Air travel, even for domestic journeys entirely within Scotland, tends to be based on scanned barcodes from either paper tickets or on phones. The infrastructure is therefore not in any way set up to deal with ITSO smartcards either for individual carriers or at airports generally.
69. That said, Transport Scotland in partnership with Orkney Island Council and Loganair, has successfully introduced a scheme to deliver a local air travel concession scheme using the **saltire**card. It is envisaged that, in due course, a scheme such as this could be replicated in other rural areas and to commercial travellers on similar routes e.g. inter-island travel on Orkney or Western Isles.
70. However, such plans would need considerable discussion, planning and investment. Air services are not therefore a part of this consultation.

vii. Smart on Other Transport Modes - Taxi

71. Taxi, and indeed other smaller vehicles like 8 seat minibuses used for community transport or social services transport, could benefit from smart ticketing in a number of ways. However, for the time being, the cost of the infrastructure is somewhat prohibitive for these very small operations.
72. Taxi services are not therefore a part of this consultation.

viii. Account Based Ticketing

73. Account Based Ticketing (ABT) is where a traveller does not pay for transport at the point of consumption but “on account”, for example a monthly billing for all travel undertaken, with potential capping and discounts applied so that the passenger always gets the best deal. There is some evidence that other European countries with more mature smart ticketing offerings, such as Ireland, Netherlands and Denmark see this as the next major thing to be developed and delivered.
74. ScotRail has already committed to deliver an ABT pilot in 2018 and, in more general terms, ABT is an example of a future development that might be best determined by a governance group once the parameters of ABT are better understood.

ix. Mobility as a Service (MaaS)

75. MaaS is an emerging concept aimed at providing a comprehensive package of account based journey planning and transport services, and not limited to conventional public transport. Assuming the concept matures into something tangible and substantial in the years ahead, smart ticketing will certainly be an element of the services on offer, and the most obvious overlap between the two areas may well be Account Based Ticketing.
76. Once again, MaaS is a topic that is not a part of the immediate considerations around smart ticketing, but has some overlap with smart ticketing. It may be another consideration for any governance moving forward to ensure that MaaS is integrated with smart ticketing.

x. Passenger Expectations

77. UK public transport passengers have often experienced the very successful Oyster smart ticketing scheme in London and, understandably, sometimes ask why Scotland cannot simply replicate Oyster.
78. There are a number of reasons for this, the main ones of which are cost (Oyster is a very expensive system and scheme to run), control (Transport for London has complete control over the London bus and tube transport network, unlike in Scotland where bus services operate in a deregulated market), a far simpler fares structure (there are only 6 tube zones and one flat rate bus fare) and, as a result of the control and simpler fares structure allied to a fully gated tube network, passengers never need to state their destination (this could not be replicated in Scotland).
79. Indeed, Transport for London (TfL) are now trying to move away from Oyster and encourage passengers to instead use contactless bank cards (also known as EMV) to pay for travel. Once again, while this is viable for London, the full benefits of using contactless bank cards for transport are much harder

to realise outside of London due to the sheer number of different operators and the hugely complex fares systems.

80. That said, Oyster in its simplest form is an e-purse, which is something that Scottish Ministers intend to introduce across the Scottish public transport network within the next 12 months or so. It is envisaged that the Scottish e-purse will work in a similar fashion to Oyster in its most basic form, but it will not be able to offer daily or weekly capping, while passengers will need to state their destination.

xi. Current Governance Arrangements

81. In January 2016 Transport Scotland led the formation of an Operator Smart Steering Group (OSSG). It is a strategic decision making group for smart ticketing in Scotland, and comprises senior representatives from bus, rail, ferry and subway operators in Scotland. In its current form it would advise, for example, on interoperability priorities and on future technologies.
82. The group meets regularly to consider the current status of smart ticketing delivery in Scotland and oversee the outputs of a number of working groups on subjects such as the national e-purse and the regional smartzone schemes.
83. Whilst the group is, overall, both committed and well intentioned with many strengths, it is also apparent that relying purely upon a collaborative approach has some limitations. The group is made up of operators with a range of sometimes conflicting commercial imperatives, across all transport modes, all sizes of operator and in a geographically varied country.
84. Perhaps, inevitably, this makes it difficult to easily reach consensus and agreement on the best way forward on a number of elements of smart ticketing.
85. However, unless there is something approaching a consistent, simple and easy to use customer offering around smart ticketing across Scotland, then passengers and potential passengers are less likely to be persuaded to use it.
86. Accordingly, future governance arrangements are a key consideration of this consultation.

F. Overcoming these Challenges

Moving towards a Scotland-wide Smart Ticketing Solution

87. The passenger is the end user of smart ticketing and it is critical that they see benefits in a consistent experience across Scotland from multi-modal smart ticketing.
88. As already outlined, several leading transport operators in Scotland have already started to adopt some form of smart ticketing. These schemes, understandably, tend to be shaped around the individual operator's view of what works best for both their business and their core customers.
89. While the Smartzones (ABC and GrassHOPPER) have shown that operators can work together to deliver successful schemes, it is less clear that transport operators' individual offerings – where these exist – facilitate consistency of experience or ease of travel on other operators' services or other modes of transport, or can be easily understood by occasional travellers.
90. Simply put, if the market is left to develop smart by itself, there is a concern that it may deliver relatively fragmented solutions that fall well short of what passengers and potential passengers expect.

Governance – Delivering and Managing Smart Ticketing in Scotland

91. To truly achieve the Scottish Government's vision for smart ticketing across Scotland, there must firstly be an agreed common infrastructure in place, adopted by all participating operators and, secondly, a consistent, simple and easy to use customer offering.
92. Then, once that is in place, there needs to be some means of ensuring that the integrity and relevance of national and key regional smart ticketing schemes is maintained and, furthermore, that there is an orderly and planned migration in due course to more advanced technologies as these emerge.
93. Dealing with the first element of this, only a relatively small number of bus operators have not made any commitment to moving to the agreed common infrastructure. There is also on-going work to identify a ticket machine for ferries that can handle smart ticketing in the challenging marine environment.
94. But, in essence, the necessary infrastructure to deliver smart ticketing across Scotland is already largely in place, and the immediate challenge is around how to encourage or ensure the few remaining uncommitted operators address this.

95. However, while there are relatively few technical barriers to delivering smart ticketing in Scotland, it has proved much more challenging to agree a reasonably common and easy to understand set of arrangements across Scotland on:
- how a customer might obtain a smartcard,
 - how they might purchase a smart product,
 - how they might fulfil that product (ie get it loaded onto their smartcard),
 - who a customer should contact in the event of a problem and how they would do so
96. It is also worth clarifying at this point that it is not the Scottish Government's intention for any of these changes to impact on the operators' ability to set and determine commercial fares and also that, for now, it is proposed that the focus of smart ticketing should continue to be on bus, rail (other than the sleeper), ferry, tram and subway.
97. There are a number of different ways in which smart ticketing and payment can be delivered or operated. At the front end, the most common, and proven, way of doing so currently in the UK outside of London is on an ITSO smartcard loaded with ITSO ticket product(s) and presented to an ITSO reader, typically a ticket machine, reader or gate.
98. However, technology already offers a wide range of other possibilities – contactless bank cards, barcodes, mobile phone technology and beacon technology – which will continue to grow and develop, and it is unlikely that today's preferred and proven technology will be the most attractive or appropriate solution in five or ten years' time.
99. The key point is that a common interoperable technology platform is at all times a vital pre-condition of introducing interoperable smart ticketing schemes that are both multi-operator and national or regional.
100. We therefore need to be collectively clear about what smart ticketing system is to be adopted and made available by transport operators at any given time. This should include consideration of how to ensure a well-managed and planned migration onto newer technology platform(s) as these become proven and affordable.



101. It seems important that public transport operators should play some role in decision making, or at least work in partnership with Scottish Ministers and other public bodies. The best way of approaching governance of both smart ticketing infrastructure and national or regional schemes will therefore be a key consideration.
102. Regardless of whether this is done on a voluntary basis (as now with OSSG), a legislative basis or some other approach, there will be some challenges about fairly representing the views and interests of around 200 bus operators, 12 ferry operators, 5 rail operators (includes cross border operators), 32 local authorities and 7 Regional Transport Partnerships all with an interest on how smart ticketing should be delivered, including incorporating the views of the end user, the passenger.

G. Conclusion

103. All public transport passengers in Scotland, whether regular users, occasional users or simply visitors to Scotland, should be able to enjoy the benefits of modern ticketing and payment technology, making their journeys simpler and easier. We believe that this will help encourage modal shift onto public transport and contribute to growth in usage of Scotland's public transport services.
104. For now, a smartcard-based approach using ITSO seems like the best way to achieve this – the infrastructure is largely in place, and it is proven, interoperable and secure. Smartcard based systems are still very much prevalent in other countries, and even Transport for London have recognised that it will take a long time before they can phase out Oyster in favour of contactless bank card payment.
105. That said, technology continues to develop rapidly, and that is why we believe that identifying the appropriate approach to governance will be essential to ensure an orderly and planned migration between technologies, as well as overseeing the operation of, and participation in, key national and regional smart ticketing schemes.
106. We are approaching this consultation on smart ticketing on the basis that legislation may be necessary to achieve full operator participation in national and regional smart ticketing schemes, and that some form of recognised and formalised governance may be necessary to support this on an on-going basis. However, we also recognise that legislation is not necessarily the only way to achieve these outcomes, and look forward to the feedback from consultation in helping us determine the best way forward.



Annex A - Consultation Responses

Part 1 - Respondent Information Form

Please Note this form **must** be completed and returned with your response.

Are you responding as an individual or an organisation?

- Individual
 Organisation

Full name or organisation's name

Phone number

Address

Postcode

Email

The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

- Publish response with name
 Publish response only (without name)
 Do not publish response

Information for organisations:

The option 'Publish response only (without name)' is available for individual respondents only. If this option is selected, the organisation name will still be published.

If you choose the option 'Do not publish response', your organisation name may still be listed as having responded to the consultation in, for example, the analysis report.

We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for Scottish Government to contact you again in relation to this consultation exercise?

- Yes
 No

Part 2 – Questions on Key Issues

Key issues on the future of smart ticketing in Scotland

Availability of smart ticketing schemes in Scotland

What is it?

In addition to individual smart ticketing schemes currently offered by individual transport operators (eg Stagecoach Megarider, SPT Bramble product for Glasgow subway or Lothian Buses Ridacard), our intention is to ensure that there is a consistent smart payment option (epurse) available across all of Scotland and on all main public transport modes, and to ensure that regional multi-modal schemes are fully supported.

What does it mean for me?

It would mean that, when fully delivered, at least one smart ticketing or payment option was available for passengers – and would remain available - across all of the main public transport modes in Scotland.

What will it cost or save?

It is not intended that Scottish Government should interfere in or influence fares setting, so it will remain a decision (as now) for transport operators about how to price the various smart tickets and products on offer. In terms of the smart infrastructure, most of the elements required are already in place, and it is not envisaged that costs will be routinely passed on, directly or indirectly, to passengers. Transport Scotland will incur a modest cost – estimated at £100,000 per annum – in supporting the national epurse.

What is the justification for claimed costs/savings?

For the epurse, it is anticipated that this new national smart product will prove popular with passengers, as it has in many other countries.

Question 1

Do you think our intention to have a consistent smart payment option available across Scotland and on all main public transport modes would promote use of public transport in Scotland?

Yes

No

Please explain your answer.

Transport modes and services to be included in national and regional smart ticketing schemes

What is it? As well as the obvious transport modes such as bus and rail, there are a number other transport offerings that could conceivably be included in such smart ticketing schemes. Our intention is that, for now, our smart ticketing plans should be limited to local bus services in Scotland, scheduled rail journeys entirely within Scotland, foot passengers on scheduled ferry services entirely within Scotland, the Glasgow subway and the Edinburgh tram.

Other things such as air services, taxis, coach tours and heritage rail/tram/bus services, as well as peripheral offerings like car hire and cycle hire, and cars and freight vehicles on ferries, are proposed - for now – to be outside of scope.

What does it mean for me? By focusing on a manageable number of services and modes, we believe that we will increase the likelihood that our plans can be delivered within a reasonable timescale.

What will it cost or save? By focusing on modes that mostly have existing smart infrastructure, additional costs will be kept to a minimum.

What is the justification for claimed costs/savings? As well as avoiding spending extra money on widening the scope of smart ticketing, it should also ensure a faster route to delivery.

Question 2

Do you agree that the scope of smart ticketing should – for now – be limited to the modes and services outlined above?

Yes

No

Please explain your answer.

Scheme Compliance

What is it?

In addition to the provision of a national e-purse that is accepted by bus, rail, ferry, tram and subway operators across Scotland, we also envisage a number of regional multi operator, multi modal smart ticketing schemes, based on Scotland's main city regions. These regional schemes could be based on existing regional ticketing legislation provision within The Transport (Scotland) Act 2001.

There are a number of considerations ranging from defining the requirements to take part in national or regional smart ticketing schemes, monitoring and controlling compliance, through to whether and how to apply sanctions for non-compliance by operators – and, indeed, what these sanctions might look like.

What does it mean for me?

We think that the simpler and more consistent we can make these arrangements the more likely prospective passengers are likely to have confidence in the new schemes. Similarly, from an operator perspective, it will be clearer what is expected of them.

What will it cost or save?

In terms of the smart infrastructure, most of the elements required are already in place, and it is not envisaged that costs will be routinely passed on, directly or indirectly, to passengers. Transport Scotland will incur a modest cost – estimated at £100,000 per annum – in supporting the e-purse.

What is the justification for claimed costs/savings?

For the e-purse, it is anticipated that this new national smart product will prove popular with passengers, as it has in many other countries.

Question 3 - epurse

- | | | |
|---|------------------------------|-----------------------------|
| a) Are you in favour of a clearly defined national epurse scheme?? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| b) Should all relevant bus, rail, ferry, tram and subway operators be expected to participate in a national epurse scheme? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| c) Should participation in a national epurse scheme be monitored and controlled? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| d) Should sanctions be imposed for non-compliance in a national epurse scheme? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Please explain your answers.

Question 4

- | | | |
|--|------------------------------|-----------------------------|
| a) Are you in favour of a clearly defined multi-modal, multi operator regional smart ticketing scheme? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| b) Should all relevant bus, rail, ferry, tram and subway operators be expected to participate in a multi-modal, multi operator regional smart ticketing scheme? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| c) Should participation in a multi-modal, multi operator regional smart | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

ticketing scheme be monitored and controlled?

d) Should sanctions be imposed for non-compliance in a multi-modal, multi operator regional smart ticketing scheme?

Yes No

Please explain your answers.

Legislation vs voluntary participation or other means of ensuring participation in smart ticketing schemes

<p>What is it?</p>	<p>New legislation would, on the face of it, be a clear cut and attractive means of specifying what is expected of operators in respect of participation in the national epurse and regional smart ticketing schemes, and ensuring they have available the appropriate smart ticketing infrastructure.</p> <p>However, for example, a combination of encouraging voluntary participation, making – for bus – provision of appropriate ticketing equipment a condition of their service registration, or a requirement of the Bus Service Operator Grant might be considered an effective alternative.</p>
<p>What does it mean for me?</p>	<p>We think that the simpler and more consistent we can make these arrangements the more likely prospective passengers are likely to have confidence in the new schemes. Similarly, from an operator perspective, it will be clearer what is expected of them.</p>
<p>What will it cost or save?</p>	<p>For those operators – typically a few smaller bus operators and the Scottish ferry industry - who have still to invest in smart ticketing equipment there will be some costs. A new bus</p>

smart enabled ticket machine might cost £3,000.

What is the justification for claimed costs/savings

Most operators have already invested in, or have plans to invest in, appropriate ticketing equipment, so the cost of achieving full infrastructure provision across Scotland is already largely addressed.

Question 5

Are you in favour of new legislation that requires transport operators to participate in national and regional smart ticketing schemes?

Yes

No

Please explain your answer.

Governance of smart ticketing in Scotland

What is it?

A recurring theme in this consultation document is that to deliver interoperable smart ticketing requires a common and proven infrastructure to be in place. Currently that is ITSO, the interoperable smartcard standard in the UK. However, alternative technologies are at various stages of being available and proven. At some point in the future the more progressive transport operators will wish to adopt one or more of these alternatives, while their passengers may increasingly expect to see greater use of, for example, mobile phones and contactless bank cards.

Transport operators have already invested significantly in smart ticketing infrastructure and, understandably, any shift to a newer technology – a further outlay for operators – needs to be carefully planned for, to ensure that systems remain fully interoperable and consistent with passenger expectations.

It therefore seems important that public transport operators should play some role in decision making, or at least advising, moving forward, probably working in partnership with Scottish Ministers and other public bodies. The best way of

	<p>approaching governance of both smart ticketing infrastructure and national and regional smart ticketing schemes is therefore a key consideration.</p>
<p>What does it mean for me?</p>	<p>From a passenger perspective an orderly and planned migration to newer technologies, as these emerge, will ensure that all of the benefits of smart ticketing and payment are retained, and remain easy to use and understand.</p> <p>From an operator perspective, investment decisions can be planned for and, collectively, a migration to newer technology platforms can be implemented in such a way that passengers are both able to benefit from technology advances and remain confident and informed about the integrity of the smart offering.</p> <p>It seems essential that governance arrangements are in place to oversee all of this, and that these arrangements are effective as well as – as far as possible – establishing, representing and implementing the consensus view of transport operators in Scotland, regardless of mode or size.</p>
<p>What will it cost or save?</p>	<p>It is not envisaged that governance arrangements will place any burden on costs for either the passenger, the public purse or for operators.</p>
<p>What is the justification for claimed costs/savings?</p>	<p>No costs to consider.</p>

Question 6

To ensure delivery of a consistent approach to meet the expectations of passengers now and in the future, should we establish a single governance group so that the technology implemented across Scotland for smart ticketing schemes is controlled?

Yes

No

Should such a governance group be

Yes

No

established formally and supported by legislation?

Should such a governance group have a role in advising on development, implementation or administration of smart ticketing schemes?

Yes

No

Are there any other areas that a governance group should have a role in?

Yes

No

Please explain your answers.

Are there any other issues you wish to raise which are not covered above?

The Scottish Government welcomes any further comments and suggestions on smart ticketing schemes or governance, and how these might be improved or made more sustainable.

Question 7

Do you have any other comments about any of the issues raised in this consultation?

Yes

No

If so, please use the box below to provide details.

My comments:

Part 3 - Assessing impact

Equality

1 In considering possible changes to the delivery of smart ticketing in Scotland the public sector equality duty requires the Scottish Government to pay due regard to the need to:

- eliminate discrimination, victimisation, harassment or other unlawful conduct that is prohibited under the Equality Act 2010;
- advance equality of opportunity between people who share a protected characteristic and those who do not; and
- foster good relations between people who share a relevant protected characteristic.

1.1 These three requirements apply across the 'protected characteristics' of:

- age;
- disability;
- gender reassignment;
- marriage and civil partnership;
- pregnancy and maternity;
- race;
- religion and belief; and
- sex and sexual orientation.

1.2 At this early stage it is difficult to determine whether significant effects are likely to arise and the aim of the Scottish Government is to use this Consultation process as a means to fully explore the likely equality effects, including the impact on children and young people.

1.3 Once completed the Scottish Government intends to determine, using the consultation process, any actions needed to meet its statutory obligations. Your comments received will be used to complete a full Equality Impact Assessment (EQIA) to determine if any further work in this area is needed.

Question – Equality Impacts

Are there any likely impacts the proposals contained within this Consultation may have on particular groups of people, with reference to the 'protected characteristics' listed above? Please be as specific as possible.

Question – Children and young people

Do you think the proposals contained within this Consultation may have any additional implications on the safety of children and young people?

Business and Regulation

1.4 A Business and Regulatory Impact Assessment (BRIA) will analyse whether the policy is likely to increase or reduce the costs and burdens placed on businesses, the public sector and voluntary and community organisations.

Question – Business impacts

Do you think the proposals contained in this Consultation are likely to increase or reduce the costs and burdens placed on any sector? Please be as specific as possible.

Privacy

1.5 A full Privacy Impact Assessment (PIA) will be conducted to ascertain whether our proposals on delivering a consistent approach may have an impact on the privacy of individuals.

1.6 At this early stage it is difficult to determine whether significant privacy effects are likely to arise and the aim of the Scottish Government is to use this Consultation process as a means to fully explore the likely privacy effects.

Question – Privacy impacts

Are there any likely impacts the proposals contained in this Consultation may have upon the privacy of individuals? Please be as specific as possible.

H. Annex B - Glossary of Terms

Term	Meaning
Back office system	There are different types of back office systems, but for this document, the main function is to securely communicate (electronically) key smartcard usage details from the mode of transport (such as from the ticket machine on board a bus, or a train station gate) to a centralised system to enable calculation of journey payment or travel history to the relevant operator or e-purse provider. The Transport Scotland back office system is called HOPS (Host Operator Processing System).
Beacon technology	An infrastructure which interacts remotely with your mobile or other smart device, similar to Bluetooth, receiving and/or issuing information (eg reading tickets) as required.
BSOG	The Bus Service Operators Grant is a payment made by Scottish Government to operators based on an agreed rate for each kilometre of their commercial bus services. The aim of the grant is principally to benefit passengers by helping operators keep their fares down.
Capping	A process where an individual's multiple journey travel costs are evaluated (by back office software) and the best value journey fare is charged. Typically this would ensure a passenger did not pay more than the cost of a day ticket or weekly ticket when making several journeys in that time. It is exponentially more difficult to implement where fares are complex and/or there are several operators
EMV	Refers to contactless bank card payment, where a PIN does not need to be provided for transactions below £30. Actual acronym is Europay, Mastercard and Visa
ETM and TVM	Electronic Ticket Machine (typically on bus) and Ticket Vending Machine (typically at a rail station)
Governance	How people collectively organise, often through rules and regulations, to manage and deliver on a programme of work or project.

Infrastructure	The equipment used for the ticketing system, for example ticket gates, machines on board buses, devices used by conductors to check tickets, ticket machines at stations, as well as back office systems.
Integrated ticketing	A ticketing system or scheme that works across modes and ticket types, it can also combine with events or attractions; for example transport to Olympic / Commonwealth venues. These can also be paper based.
Interoperable	A smartcard that can be used anytime, anyplace, anywhere. Can be used on different transport operators (for example with buses this would be, Stagecoach, First, McGills etc) also different locations (Edinburgh, Glasgow, Highlands) and different modes (train, ferry, bus, tram, subway).
ITSO	ITSO is a not for profit organisation that oversees technical, standardisation and interoperable smart ticketing services for the UK. It is supported by the UK Government, and ITSO is a technical platform on which interoperable smart ticketing and e-purse schemes can be built. The national concessionary travel schemes across the UK are based on this technology. ITSO 2.1.4 is the current standard required for a smart ticketing service.
Legislation <i>Primary legislation</i> <i>Subordinate legislation</i>	The process of making or enacting laws Primary legislation consists of Acts of Parliament or statute. A subordinate legislation is a law which is enacted under delegated powers, such as statutory instruments (for example regulations or by-laws).
Multi-modal	Can be used on different modes of transport, for example on train, ferry and bus.
Multi-operator	Can be used on more than one operator but on one mode of transport (for example with buses this would be, Stagecoach, First, McGills etc).
National e-purse	A pay as you go system, typically via a smartcard or mobile app. The smartcard or app is pre-credited via an online account or other means of topping up or buying credit.

National concessionary travel scheme, national entitlement card	The Transport Scotland national concessionary scheme provides over 60 year olds and people with a disability with free bus travel. A National Entitlement Card, part of the saltirecard family, is provided for recognition, and also to electronically enable the journey using smart ITSO infrastructure.
NFC	A mobile device that is able to read a smartcard through Near Field Communication (NFC) – often seen when a smartcard is held up to a mobile device on a train or similar. The reader will also often be able to indicate the ticket / money on the smartcard.
Proprietary system	A system that is in place already, usually owned by the person or company who developed it, but which cannot interoperate with other systems eg Lothian Buses Ridacard, or London’s Oyster.
Saltirecard	A smartcard that is capable of being used for smart ticketing or epurse with ITSO technology. It is branded with a saltire flag on the reverse, with the name ‘ saltirecard ’. Each operator customises their own smart saltirecard on the front, the card should also include a reference number and some operators include your pass photo
Smart/Smart Payment	Non-paper technology - in this context using a micro-chipped smartcard, mobile or contactless payment for travel purposes.
Smartcard	A micro-chipped card that stores your travel ticket, or retains monetary credit to be deducted on use.
Smart platform	Similar to infrastructure (see above) and system (see below), and in the context of this document, this refers to any electronic or digital product or service that can interact with a smart ticket or smart payment. This could include a mobile app on android or apple, a card reading app, an online system or website, electronic ticketing machines etc.
Smart ticketing	An electronic travel ticket loaded on a micro-chipped card or mobile phone.
Smart ticketing system	A system that enables the use of an electronic ticket(s) on a smartcard or mobile app. These can be multi-modal and multi-operator.

Smart ticketing scheme	A scheme can refer to any set of smart ticketing arrangements with a particular set of rules around availability, prices and validity. These can be single operator eg SPT subway, ScotRail season tickets, Stagecoach Megarider, multi operator eg the smartzones in Aberdeen and Dundee or the national bus concessionary travel scheme, or multi-modal eg the epurse which is under development – these are all examples of smart ticketing schemes.
Smartzone	A (usually urban based) region where transport operators agree to set up and participate in multi-operator smart ticketing, at locally set prices and validity rules. GrassHOPPER (based around Aberdeen) and ABC (based around Dundee) are current examples in Scotland.



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