

DCC SMETS1 PROGRAMME

SMETS1 PREPAYMENT FORUM

March 2017



AGENDA

Agenda Item	Times
Coffee / Breakfast	09:30
Introduction and agenda walkthrough	10:00 (15 mins)
Prepayment Options Recap	10:15 (20 mins)
Breakout 1: Describe an ideal process for a prepayment top up (for an enrolled SMETS1 meter)	10:35 (30 mins)
Breakout 1 reporting	11:05 (20 mins)
Breakout 2: Describe the business impact of changing from current prepayment arrangements to one of the options in the IEPFR	11:25 (30 mins)
Breakout 2 reporting	11:55 (20 mins)
Q&A	12:25 (30 mins)
Lunch	12:55
Access to SMEs	From Lunch

BREAKOUT GROUPS 9TH MARCH 2017

Group 1

Terry Underwood	Aprose
Paul Skillings	British Gas
Stuart Haughton	Calvin Capital
Chris Jackson	E.ON
Andrew Matthews	Flow Energy
Endika Enes Miranda	Scottish Power
Jim Nield	Secure Meters
Stephen Lovell	Npower

Group 2

Adrian Cave	British Gas
Chris Beard	CGI
Loic Hares	Clean Returns
Marc Brook	Economy Energy
Jeff Studholme	Smart Meter Assets
Nigel Hullett	SSE
Gerry Conboy	Trilliant

Group 3

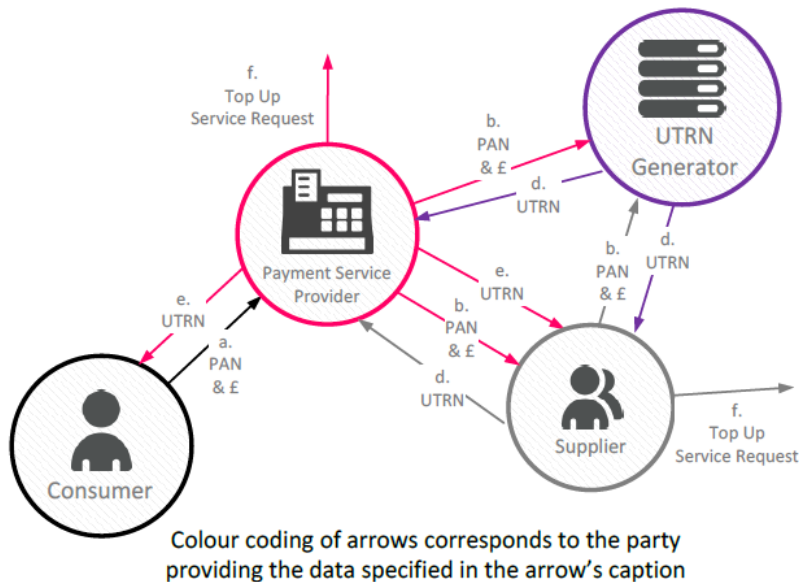
Laura Sambrook	Ecotricity
Ashley Pocock	EDF Energy
William Wilson	GLOBAL-365
TBC	Iresa Limited
Nigel Orchard	Pilot Systems
Chi-Ho Lam	SSE
Zeljko Zubrinic	Trilliant

Group 4

Simon Woodward	Extra Energy
Clive Eisen	Hildebrand Technology Limited
Philip Doyle	Reverve Energy
Stephen McLaughlin	Scottish Power
Nick Jones	Siemens
Bjorn Suetens	SSE
Louise Porter	Utilita
Adesina Oladeji	Iresa Limited

PREPAYMENT

UTRN Generation Option 1



Provide a centralised DCC service to generate UTRNs on request

Suppliers and Payment Services Providers would be eligible to use this service

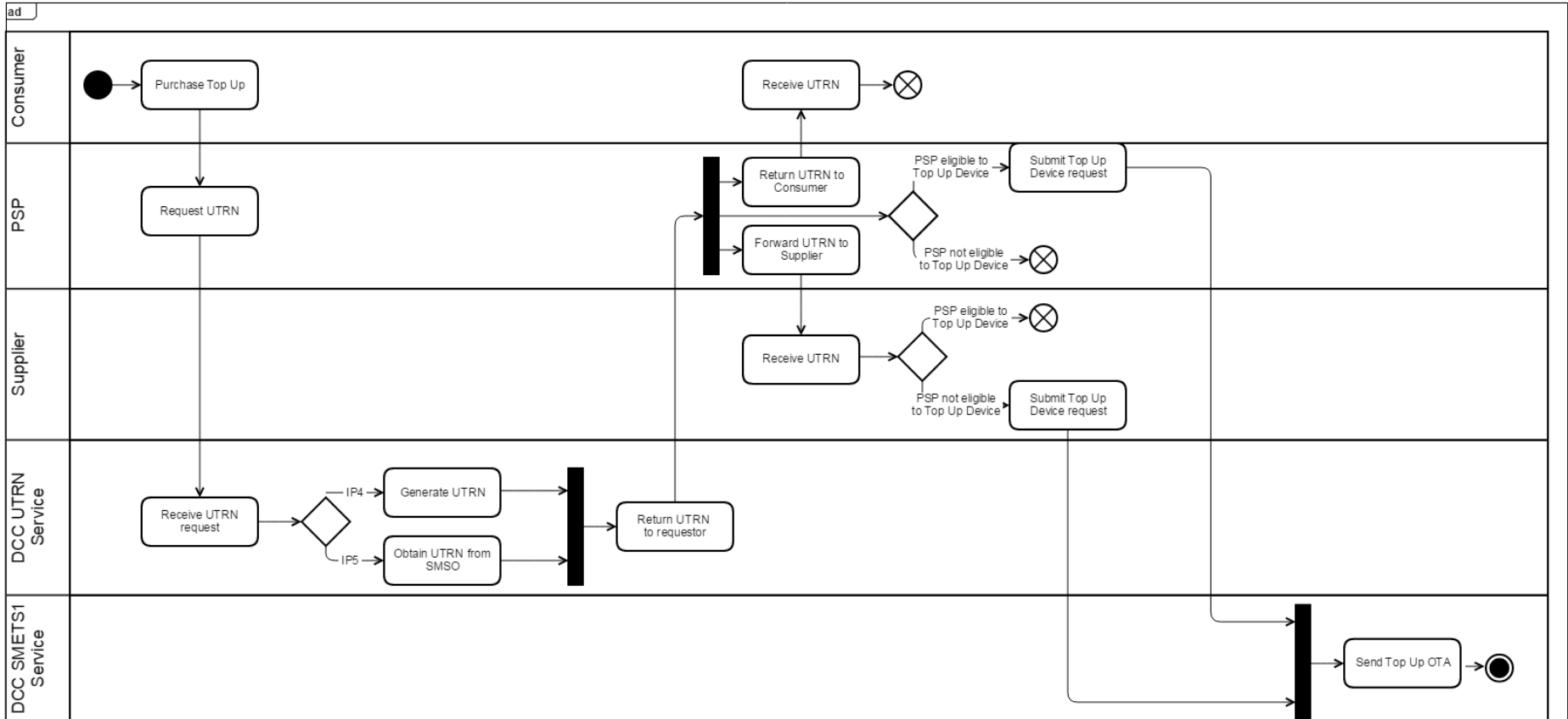
Would require an interface, which could either be an extension of the main SMETS1 user interface or separate

In this model, we show the Supplier submitting the Top Up Device request (including the UTRN provided by the service) to DCC to send the top up to the meter over the air (currently only a Supplier is eligible to do that via the SMETS2 DCC User Interface) – we also consider in the report whether:

- PSPs should be eligible to do this on Suppliers' behalf
- the Top Up Device service request should be the trigger for DCC to generate a UTRN to be both sent to the meter over the air and returned to the requestor (which necessitates the use of the SMETS1 DCC user interface for this service)

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UTRN Generation Option 1 (PSP obtains UTRN in this example)

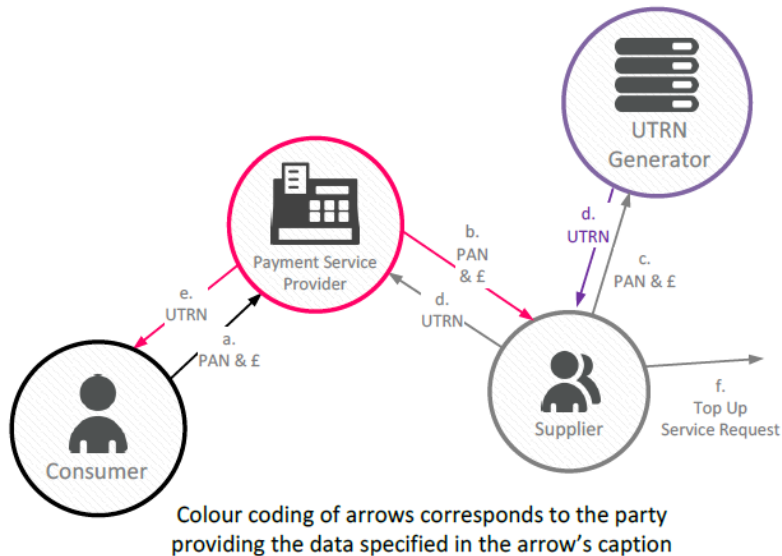


The Supplier may also be the requestor of the UTRN

Top Up Device service request is currently only available to Suppliers (in SMETS2)

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UTRN Generation Option 2



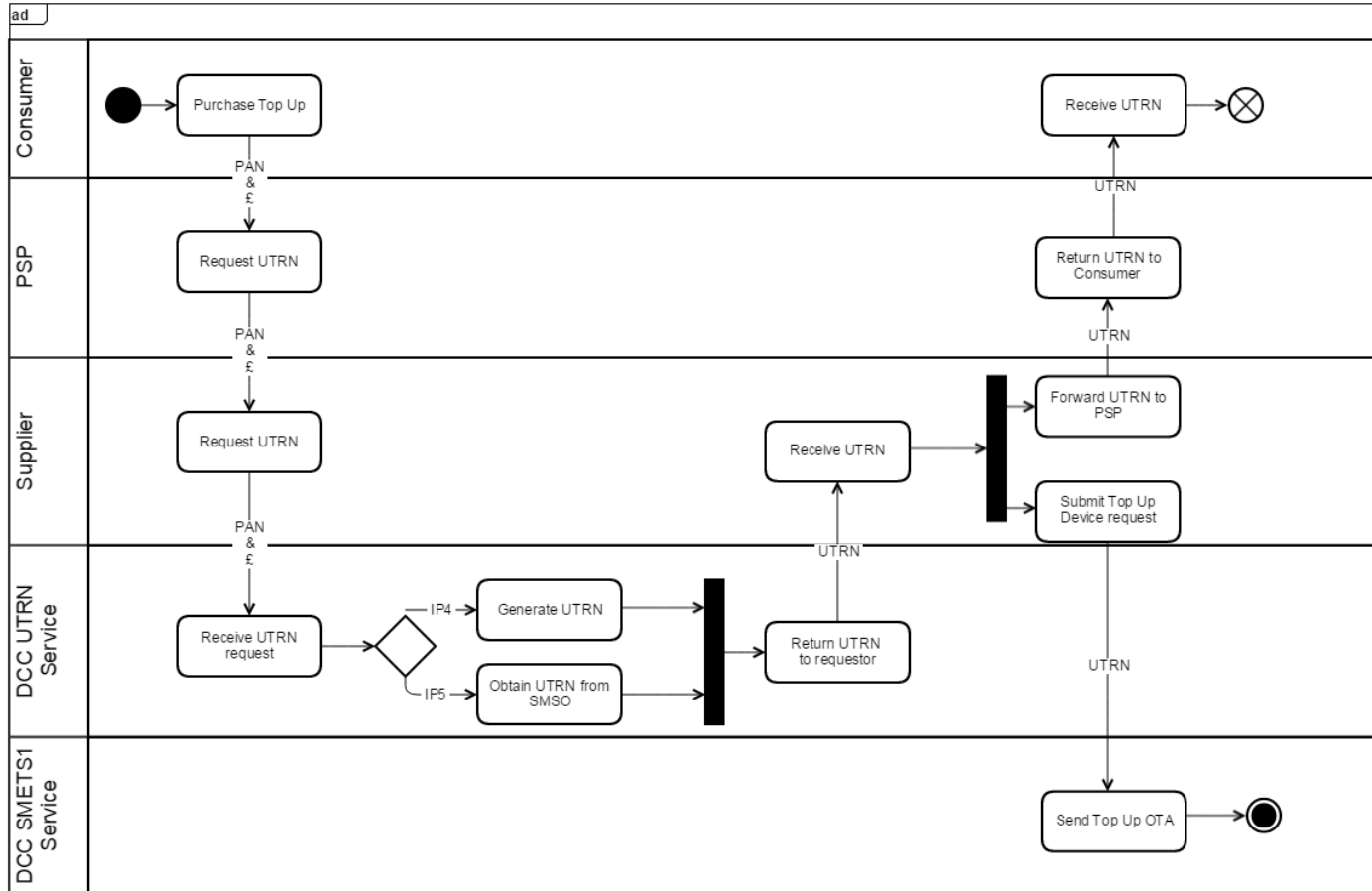
Also to provide a centralised DCC service to generate UTRNs on request

Only Suppliers would be eligible to use this service: PSPs would interface with the Supplier to obtain UTRNs

As with option 1, it would require an interface, which could either be an extension of the main SMETS1 user interface or separate

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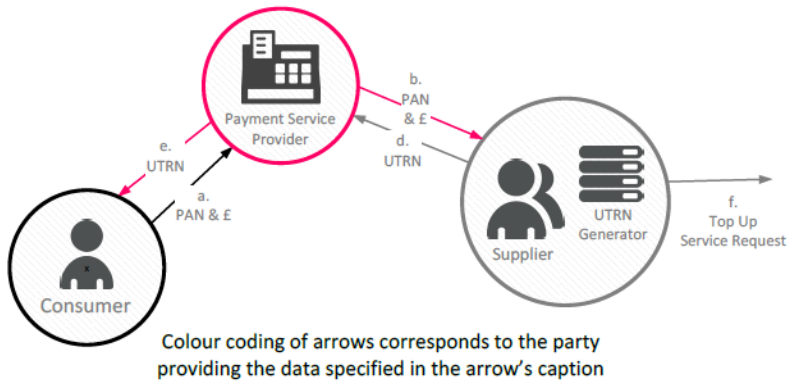
UTRN Generation Option 2



UTRN request and Top Up Device request could be one and the same

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UTRN Generation Option 3

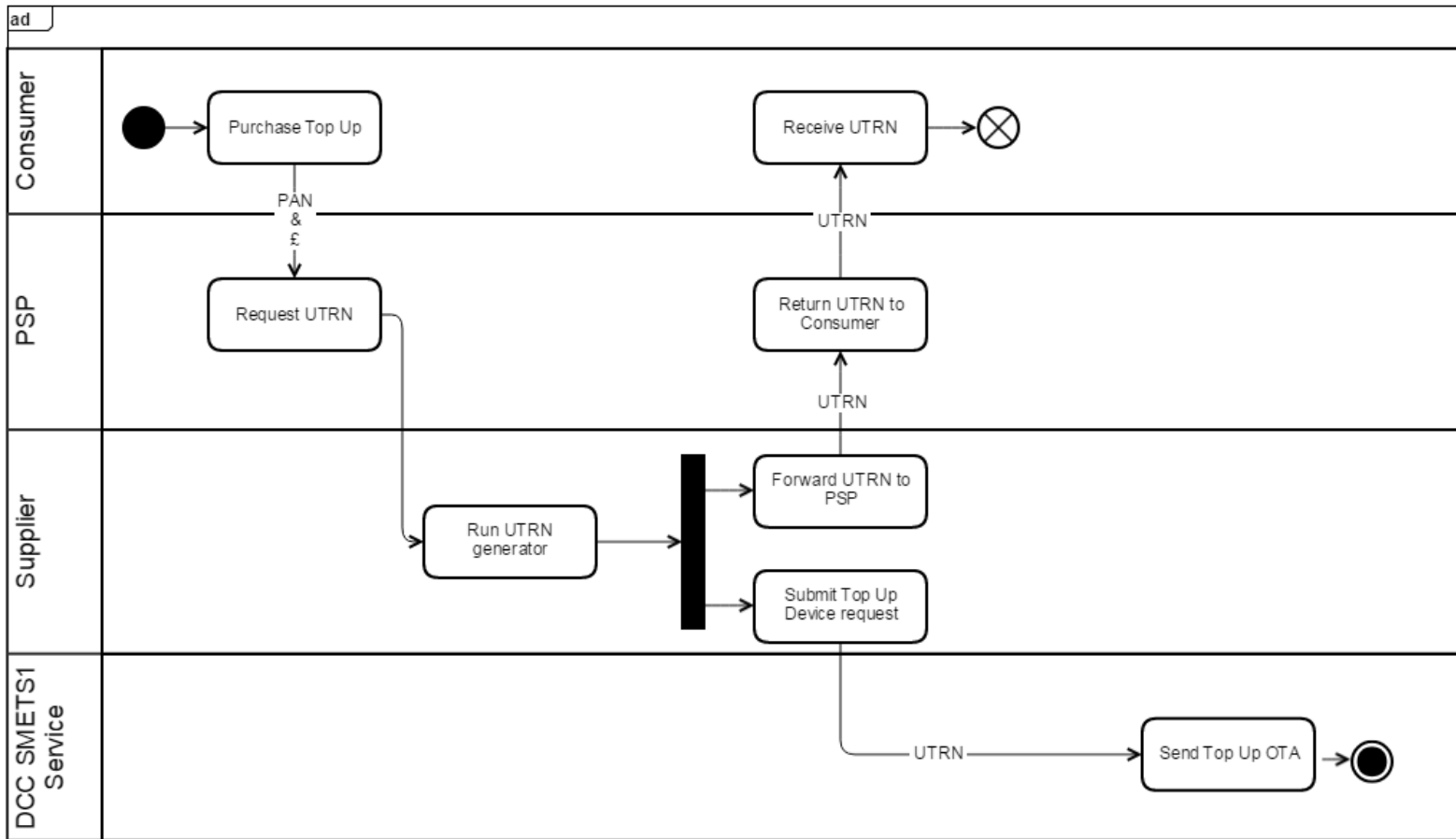


Provide a standard UTRN generation function for Suppliers to integrate into their own systems to obtain UTRNs that would subsequently be used at part of a Top Up Device service request via the DCC SMETS1 user interface

DCC would not support generation of UTRNs at a transactional level

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UTRN Generation Option 3 (Supplier obtains UTRN in this example)



SUMMARY OF CONSULTATION FEEDBACK (ANONYMISED)

- Broad agreement with the range of options identified in the IEPFR
- A minority expressed a preference to continue with existing SMSO arrangements for UTRN provision
- Respondents were split in their preferences for the options, with some support for each or for two of the three options considered
- Comments were received regarding:
 - A centralised DCC service (options 1 & 2) being a potential single point of failure
 - Alignment to the SMETS2 approach to prepayment
- Potential support for both a one-step and two-step UTRN request/ OTA top up procedure in the case of options 1 & 2



QUESTIONS?

DCC PUBLIC



KEY DIFFERENCES BETWEEN SMETS1 AND SMETS2 PREPAYMENT

Participant	Role in prepayment model for SMETS1 Meters (as-is) – See Figure 10	Role in prepayment model for SMETS2 Meters – See Figure 11
Consumer	Purchases top up in person or online, providing PAN (also known as PCN or SCN) which uniquely links the customer to the target SMETS1 meter	Same as for SMETS1.
Payment Services Provider (PSP) e.g. Paypoint, Payzone, Post Office	<p>Provides the supplier with access to a network of retail outlets capable of accepting payments for top ups.</p> <p>May also provide supplier with 'white label' online/ mobile payment services for top ups.</p> <p>During top up transaction: Requests UTRN from SMSO or energy supplier as part of a one step process that also triggers the SMSO/energy supplier to send Add Credit Command to meter.</p> <p>Provides UTRN to consumer at point of sale.</p>	<p>Similar to SMETS model, except:</p> <p>During top up transaction: Requests UTRN from energy supplier (or a nominated third party), as the first stage in a two-step process for applying top ups to meters.</p>
Energy Supplier	<p>May have in-house payment infrastructure to retail direct to consumer (e.g. via website) – obtains UTRN to provide to consumer as part of transaction.</p> <p>May have capability to generate UTRNs in-house (either to fulfil direct sales, or through PSP channels) using algorithms provided by manufacturer(s) of supported SMETS1 meters and security credentials held on meter.</p> <p>May request UTRN from SMSO, as part of a one step process that also triggers the SMSO to send Add Credit Command to meter.</p> <p>May only receive periodic financial settlements and reconciliation reports from SMSO and/or PSP.</p>	<p>May generate UTRNs in-house using GBCS algorithm and own security credentials.</p> <p>May obtain UTRNs from a third party with whom the supplier shares its security credentials for UTRN generation.</p> <p>Submits Top Up Device Service Requests via DUIS to send UTRNs to SMETS2 meters.</p>
SMSO	<p>May have capability to generate UTRNs using algorithms provided by manufacturer(s) of supported SMETS1 meters and security credentials held on meter.</p> <p>Forms and sends Add Credit Commands to deliver UTRNs to SMETS1 meters, on receipt of request from PSP or supplier (which may or may not include the UTRN).</p>	No role in SMETS2.
Head End System vendor	<p>May develop software to generate UTRNs using algorithms provided by manufacturer(s) of supported SMETS1 meters.</p> <p>Develops software to convey UTRNs to SMETS1 Meters as part of an Add Credit Command.</p>	No role in SMETS2.
Meter manufacturer	Specifies the algorithm to be used to generate UTRNs for its SMETS1 meters.	Implements UTRN algorithm as specified in GBCS.
SMETS1 CSP	Conveys Add Credit Commands to SMETS1 Smart Metering System's WAN Interface.	No role in SMETS2.
DCC (including DSP and CSPs)	No role in SMETS1 as-is.	Forms and conveys Add Credit Commands to deliver UTRNs to SMETS2 meter's HAN Interface, on receipt of Top Up Device Service Request (which includes the UTRN).

CONSOLIDATED OUTPUTS FROM BREAKOUT SESSIONS



BREAKOUT SESSION 1
DESCRIBE AN IDEAL PROCESS FOR A
PREPAYMENT TOP UP (FOR AN ENROLLED
SMETS1 METER)



BREAKOUT SESSION 1 - DESCRIBE AN IDEAL PROCESS FOR A PREPAYMENT TOP UP (FOR AN ENROLLED SMETS1 METER)

User experience (Consumers)

- **Consumer**
 - 24x7 service, year round
 - Transparent processes on CoS & CoT
 - Seamless in transition
 - Timing of reversal/ void transactions needs to be allowed for
- **How do consumers become eligible to make a top-up payment?**
 - Need to support virtual cards / apps etc.
 - Online payments are becoming increasingly prevalent
- **DCC needs to support resolution of problems in the payment process – suppliers have strict licence obligations re. prepayment consumers**
- **It was suggested to keep all the channels to get a prepayment top up open to customers, such as; Online, pay-point, mobile, etc.**
- **Consumers should get near real-time access to UTRN. Short transaction times must be a key consideration to minimise waiting times**

BREAKOUT SESSION 1 - DESCRIBE AN IDEAL PROCESS FOR A PREPAYMENT TOP UP (FOR AN ENROLLED SMETS1 METER)

User experience (Suppliers, PSPs)

- Need to consider detailed impact on back-office functions more generally
- DCC to handle complexity of different UTRN algorithms in SMETS1
- DCC to handle access controls (ensure access control applied regardless of option)
- Payment & UTRN generation separated (solution needs to facilitate this)
 - Also separation of UTRN generation and top up message to Meter
- The complexities in PAN management were discussed
- Single Process for SMETS1 and 2
- UTRN functions are critical for non top ups also (40 & 60 digit codes)
- Credit balance management
- Easy of implementation

BREAKOUT SESSION 1 - DESCRIBE AN IDEAL PROCESS FOR A PREPAYMENT TOP UP (FOR AN ENROLLED SMETS1 METER)

Roles and Responsibilities

- Any option that includes PSP will add the complexity of managing registration data that DCC holds.
- The PSP solution should be simple without the PSP having to make the decision on whether to send a certain request to SMETS1 or SMETS2 service.
- Supplier centric transactions are preferable (similar to SMETS2)
 - No direct PSP access to UTRN generation solution
- Security
 - Authorised access to meters
 - Supplier control

BREAKOUT SESSION 1 - DESCRIBE AN IDEAL PROCESS FOR A PREPAYMENT TOP UP (FOR AN ENROLLED SMETS1 METER)

Timing & reliability

- Concerns were raised that the absence of WAN providers information (as in SMETS2) will impact the availability and target response times
- Availability of UTRN system needs to be high
- Latency of Transaction minimised for customer experience (15-26 seconds)
 - Resilient UTRN creation
 - Fallback for Suppliers to access directly if PSP (shop) service down
- If a central DCC service is created it requires a higher degree of resilience
- Concerns were raised around a number of non-functional requirements such as transaction times, outage management, etc.

BREAKOUT SESSION 1 - DESCRIBE AN IDEAL PROCESS FOR A PREPAYMENT TOP UP (FOR AN ENROLLED SMETS1 METER)

Timing and reliability

- **Main Values**
 - Redundancy has to be better than DCC specification i.e. hot swap or available in seconds not hours
 - Availability
 - Reliability of Top up
 - Speed of top up -Transaction time needs to be quick (seconds)
 - Failed Transaction recovery
 - Network Capacity
 - Demand is difficult to forecast for PPM customers and within the +/- 10% requirement is hard
 - Less links / steps in solutions as possible
- **Linked values**
 - Integrity
 - Flexibility
 - Accuracy
 - Authentication
 - Misdirected Payments

BREAKOUT SESSION 1 - DESCRIBE AN IDEAL PROCESS FOR A PREPAYMENT TOP UP (FOR AN ENROLLED SMETS1 METER)

IEPFR Option specific comments

- People felt that Option 2 has more points of failure before a UTRN gets to the consumer.
- Option 3 might prove more expensive because of added complexity.
- If option 1 is chosen, PSP using the service can be elective. This requires the optionality to include PSP option but let the suppliers choose whether to implement/extend it to PSP or not.
- A version of the SMETS2 option where a PSP can generate UTRN as well as the Energy Provider would be useful
 - This can be an extension to Option 3
 - Security and encryption key elements will add complexity to this implementation
 - Option 3 also puts the complexity of integration in user systems
 - A centralised DCC option would be preferable to reduce the above listed complexity of integration on users
- Under Option 1, need clear processes for managing the relationship between the PSP and DCC:
 - Process for nominating PSPs by Users
 - CoS process impacts

BREAKOUT SESSION 2
DESCRIBE THE BUSINESS IMPACT OF
CHANGING FROM CURRENT PREPAYMENT
ARRANGEMENTS TO ONE OF THE OPTIONS IN
THE IEPFR



BREAKOUT SESSION 2 - DESCRIBE THE BUSINESS IMPACT OF CHANGING FROM CURRENT PREPAYMENT ARRANGEMENTS TO ONE OF THE OPTIONS IN THE IEPFR

Consolidated Feedback

- Current SMETS1 prepay providers will have to change the current SMETS1 solution to match one of the options chosen from IEPFR.
- SMETS2 Only or future pre-pay providers will have to either create or leverage a solution similar to SMETS2
- Participants highlighted the preference for standardising prepayment services as much as possible across SMETS1 & SMETS2
- Option 1 & 2 represent different models for SMETS1 and SMETS2 prepayment
- All agreed that SMETS1 function regarding prepayment are fundamentally different to SMETS2
- Participants discussed at length the exception management for SMETS1 regardless of option chosen
 - Exception management at both technical and business levels
 - Need for back-out or reversal process to be present
 - SMETS1 back out processes are likely going to be different from SMETS2
 - Potentially different models for cash and online payments
 - Issue resolution training would be required (identified a widespread training requirement)
 - SR Security “free credit” only to be used by supplier (will be captured in SR workshop)
 - Needs tight interlinking of processes and visibility back to User at each stage
 - Need clarity on ability for Users to see Alerts etc.
 - DCC helpdesk needs to 24/7 365

BREAKOUT SESSION 2 - DESCRIBE THE BUSINESS IMPACT OF CHANGING FROM CURRENT PREPAYMENT ARRANGEMENTS TO ONE OF THE OPTIONS IN THE IEPFR

Consolidated Feedback

- **Pros & Cons of keeping the PSP solution was discussed. Keeping PSP in will add to the complexity, however, PSPs reduce the risk of a consumer losing UTRN as these can be re-issued at the point of sale without having to call the energy supplier. PSP appointment & Deappointment would be required given the current security model assumptions.**
- **There was a brief discussion on which option would be quicker to adapt to or implement.**
- **General feeling was that it should take the users about 12 months to implement SMETS1 pre-pay solution after DCC go live**
- **Users insisted that the communication regarding the selected option be frequent, keeping the industry up-to-date on the decisions process so that they have enough time to adapt to the changes**
- **Sharing SEC changes/drafts regularly as they appear was also requested.**
- **Participants discussed at length the management of device migration**
 - **One way suggested to mitigate this risk was to change the meter in a credit mode on churn by losing supplier.**

BREAKOUT SESSION 2 - DESCRIBE THE BUSINESS IMPACT OF CHANGING FROM CURRENT PREPAYMENT ARRANGEMENTS TO ONE OF THE OPTIONS IN THE IEPFR

Consolidated Feedback

- Risk - It was highlighted that SMETS1 will require device inventory to be managed if Option 3 is selected and PAN reconciliation will be a challenge.
- Security implications for the new solution to be considered. The risk should be managed equal to or more than SMETS2 levels.
- Different cohorts have different security implementations. This will lead to more changes required within each cohorts.
- Risk – Technical specifications of some meter types might make some of the options not feasible
- Risks need to be identified for the Tactical SMETS1 arrangements moving to Strategic SMETS1 solution.
- Risk – Loss of certain current SMETS1 functions/features
- Assumption that the service in Option3 would be plug and play (the model employed by Parse and Correlate) and would need to be able to access algorithms directly

BREAKOUT SESSION 2 - DESCRIBE THE BUSINESS IMPACT OF CHANGING FROM CURRENT PREPAYMENT ARRANGEMENTS TO ONE OF THE OPTIONS IN THE IEPFR

Consolidated Feedback

- **Cost/ complexity of change**
 - Some parties are still developing SMETS1 Prepayment
 - Others are already operating significant volumes
 - Difficult therefore to judge the scale of change
 - Clarity of direction on SMETS1 Prepayment options may drive behaviour in the deployment of SMETS1 & SMETS2 Meters
- **Risk**
 - A SMETS2 like model minimises stranding risk (all Suppliers will invest in S2 Prepayment)
 - Other prepayment related services are just as important (e.g. Non-Disconnect Calendars etc.) and no less complex
 - Transition may involve the operation of parallel processes for UTRN generation during the period of SMETS1 enrolment
 - Re-use of Suppliers' SMETS2 infrastructure/ prepayment solutions reduces time/ risk in delivery
 - How long the change/ transition takes will depend on the detailed solution that is designed
 - Prioritising Prepayment in SMETS1 enrolment reduces the stranding risk