mojaloop

Connections between Mojaloop and non-Mojaloop networks

Proposal:

- Define a method for non-Mojaloop networks to connect to Mojaloop networks that is:
  - As simple as possible
  - As easy to implement as possible
  - Capable of extension and generalisation to participate in a more general inter-network architecture

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- Support the following customer use cases:
  - Transferring funds from the non-Mojaloop scheme to a customer in a Mojaloop scheme
  - Transferring funds from a DFSP in the Mojaloop scheme to a customer who is reachable through the non-Mojaloop scheme.

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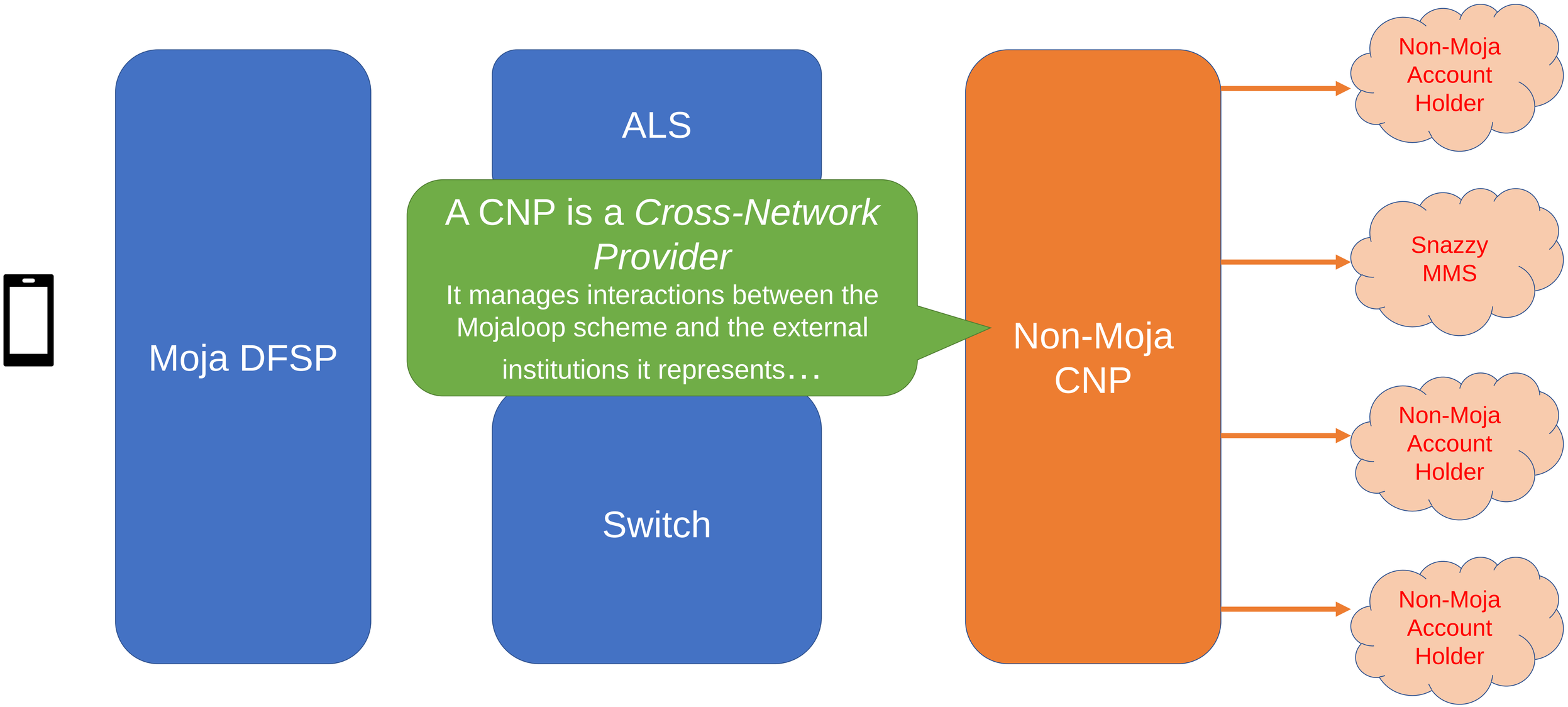
  - Transferring funds from a DF[illegible]in the Mojaloop scheme to a customer who is reachable through the [illegible]jaloop scheme.

If we did nothing here, this would presumably include: *transfer from one non-Mojaloop scheme to another non-Mojaloop scheme via a Mojaloop scheme.*
Do we want to include or exclude this case?

A simple core position:



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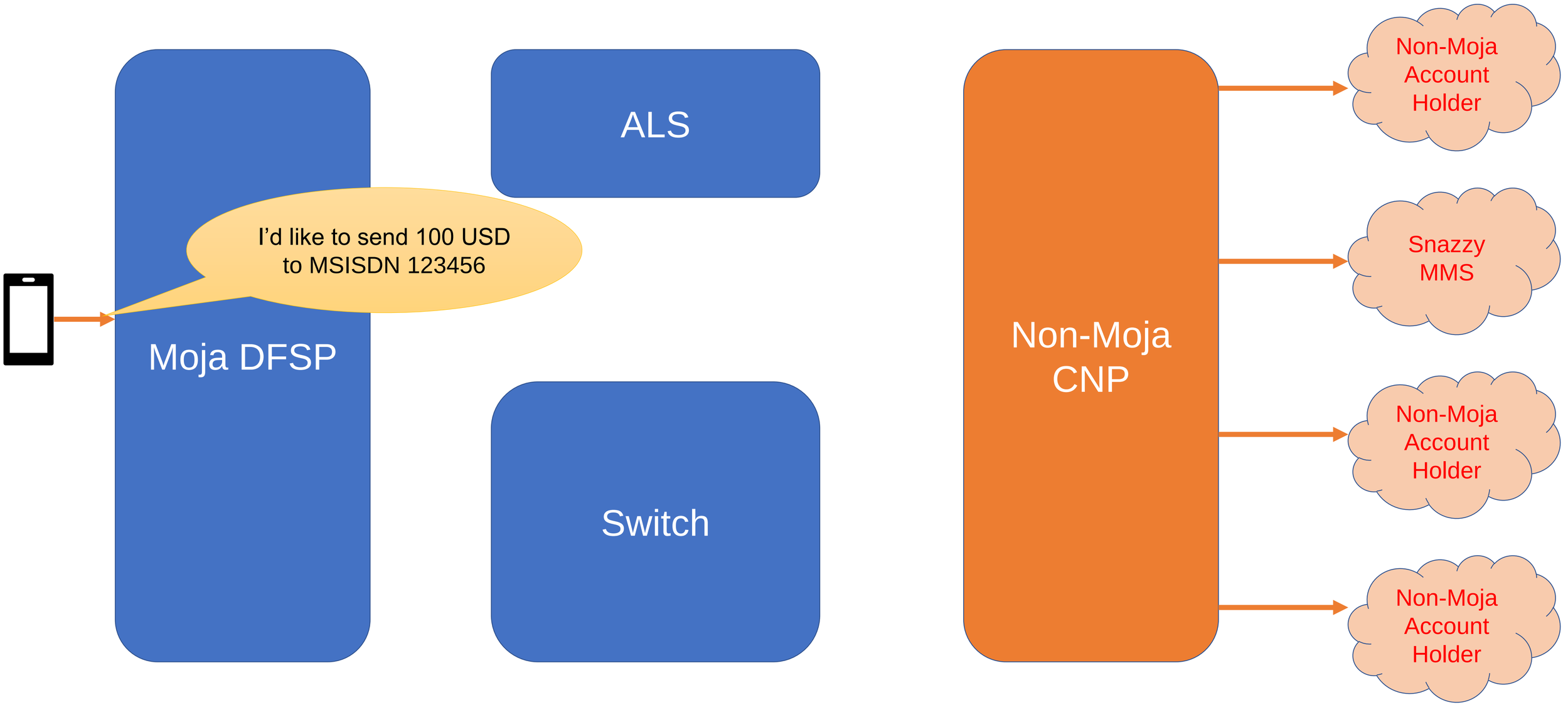

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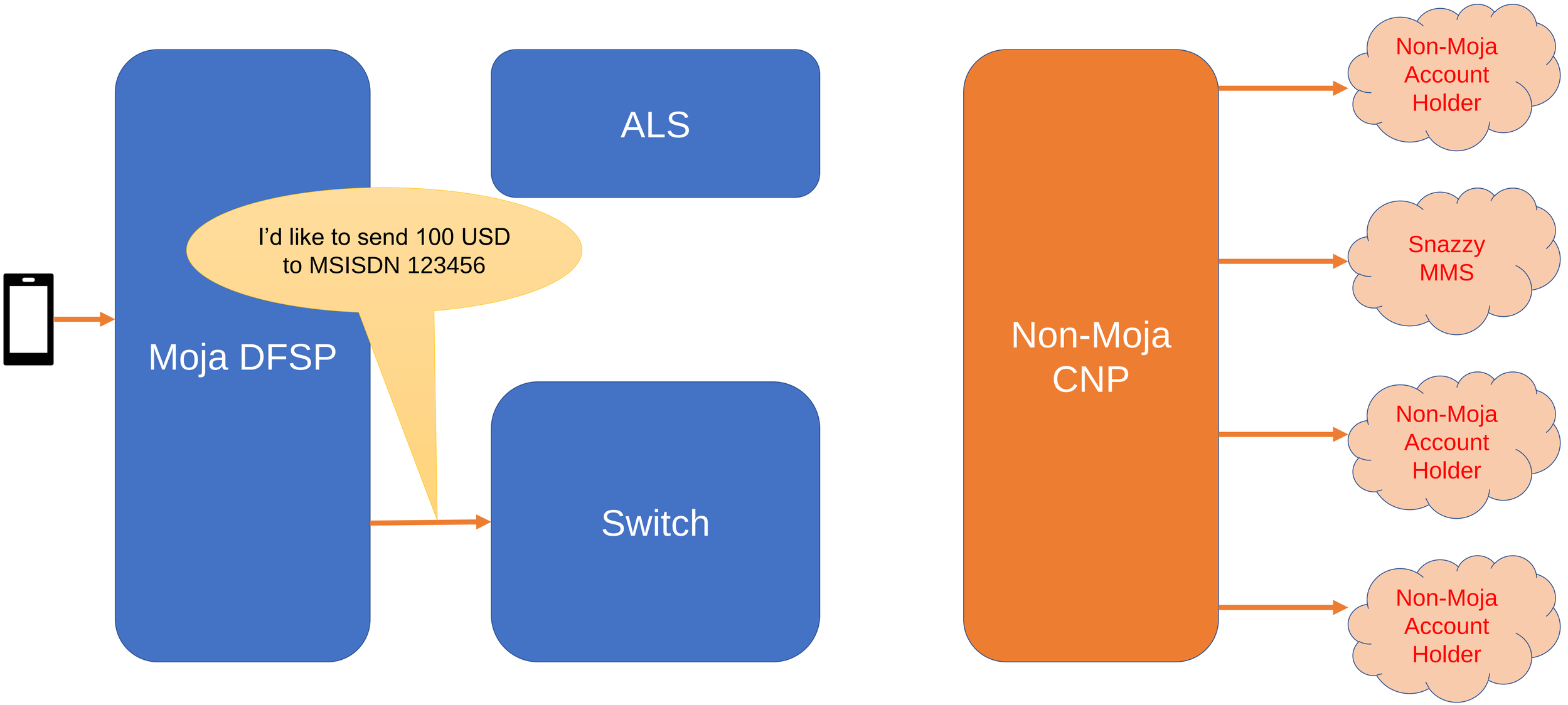

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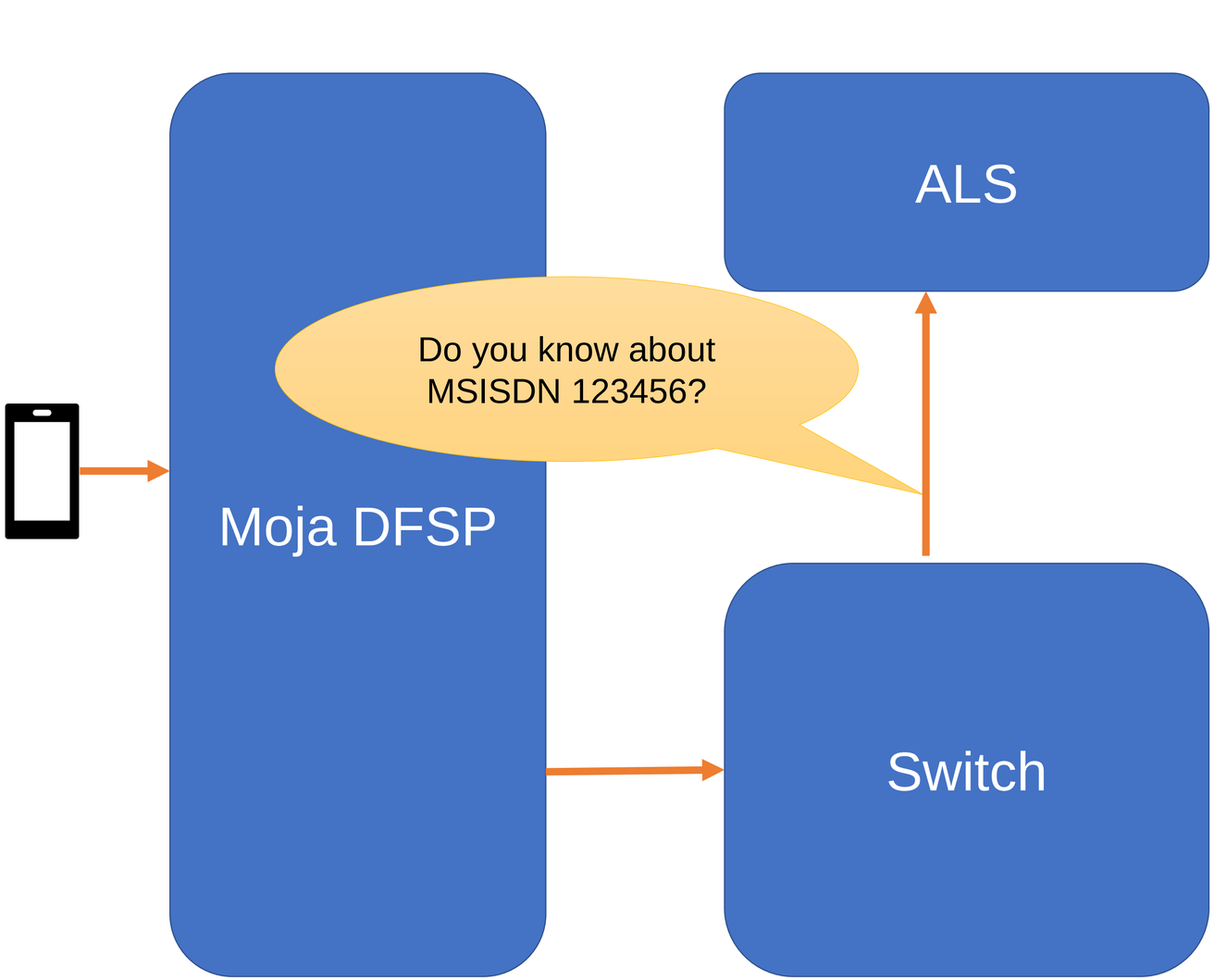

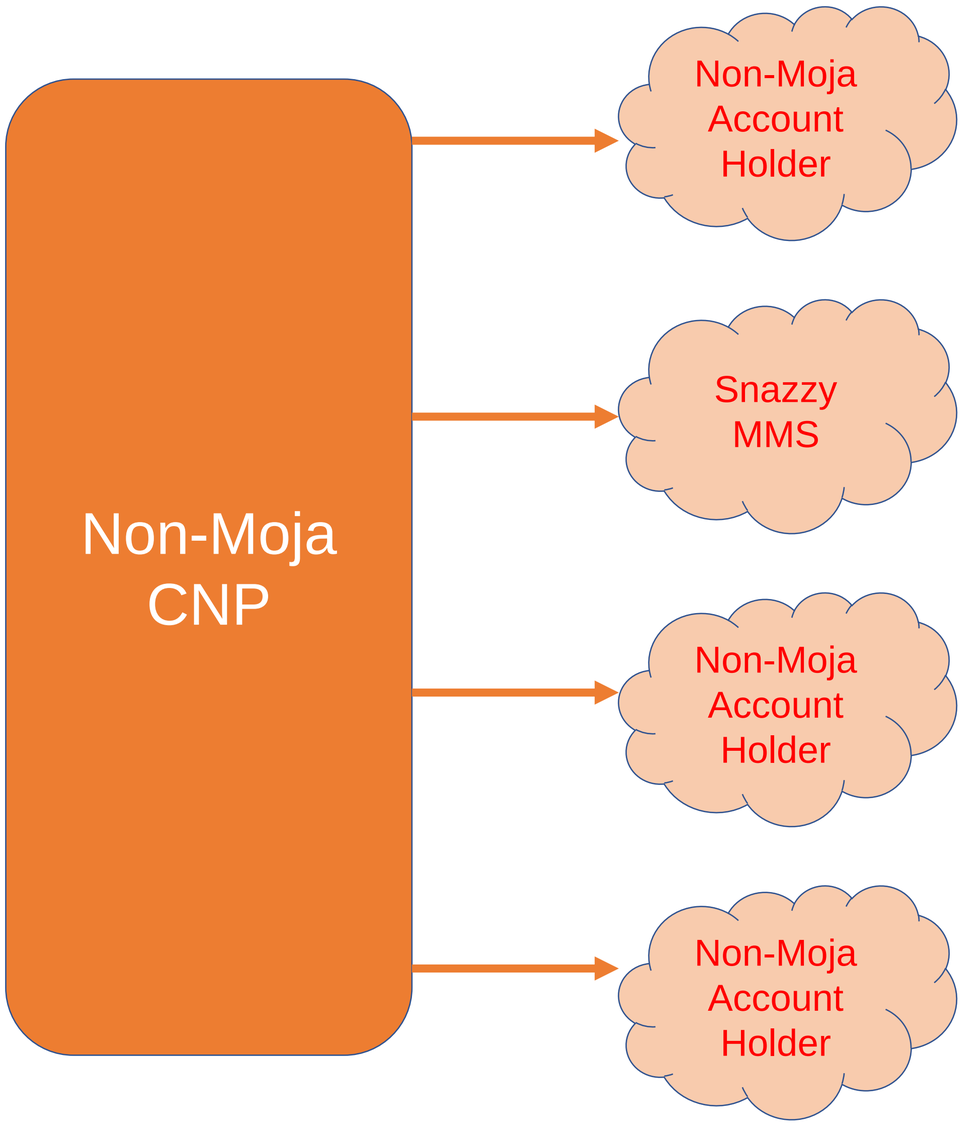

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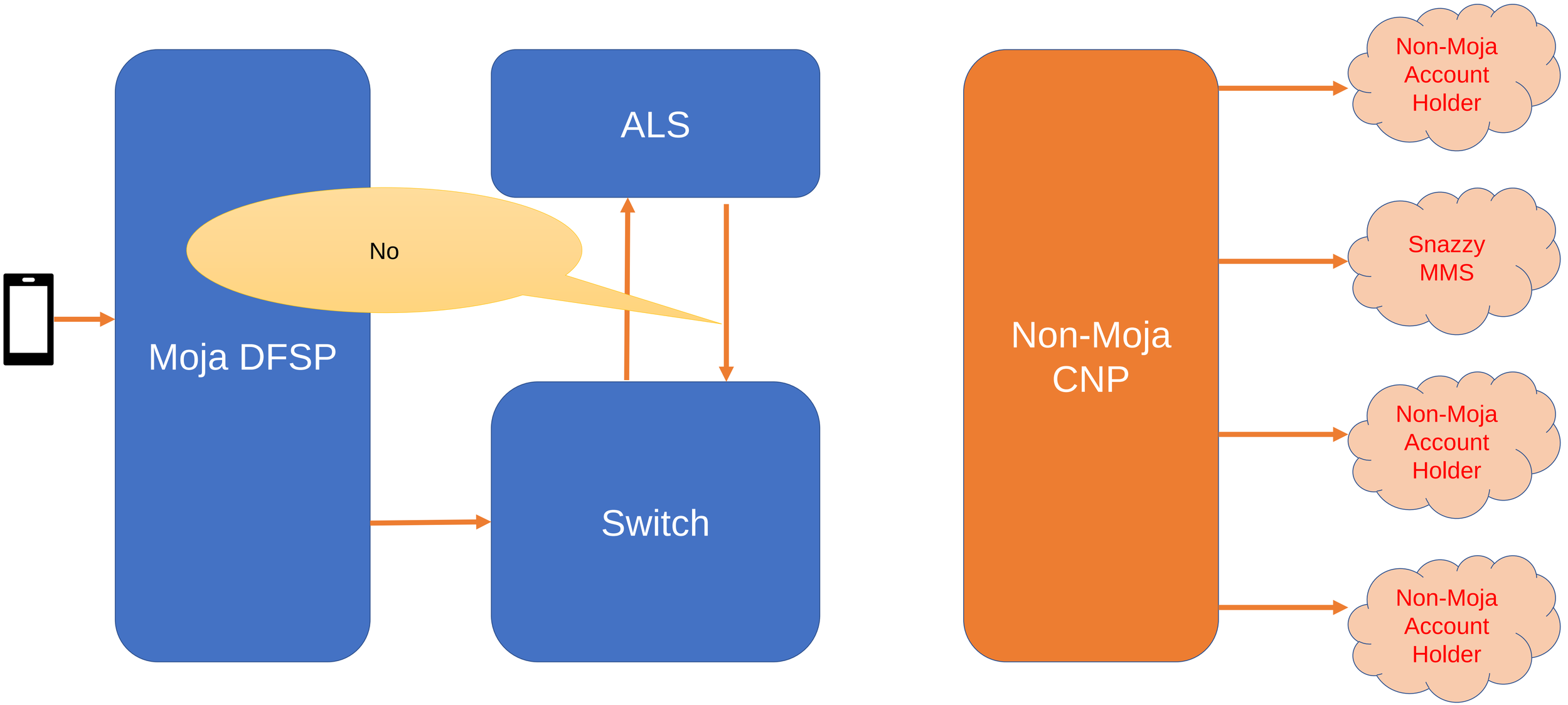

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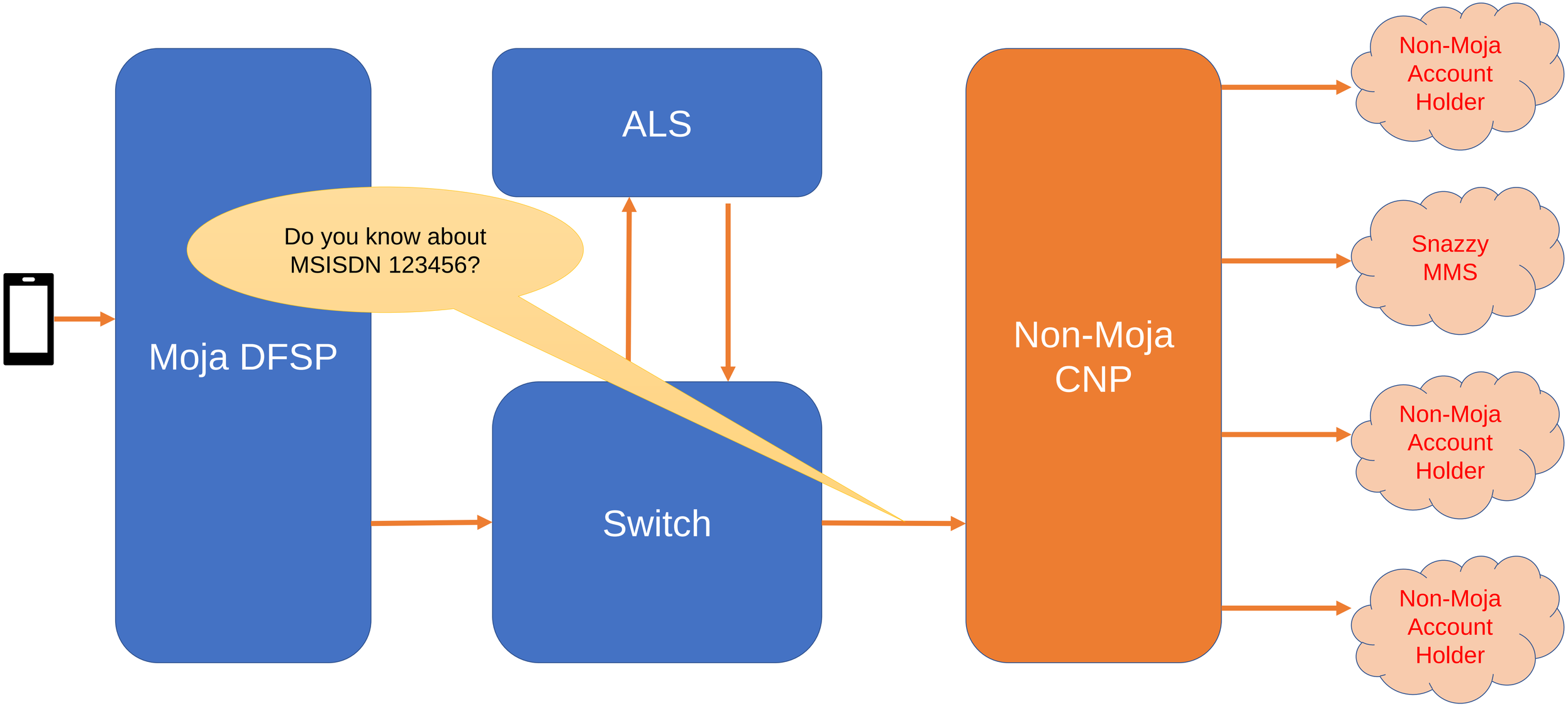

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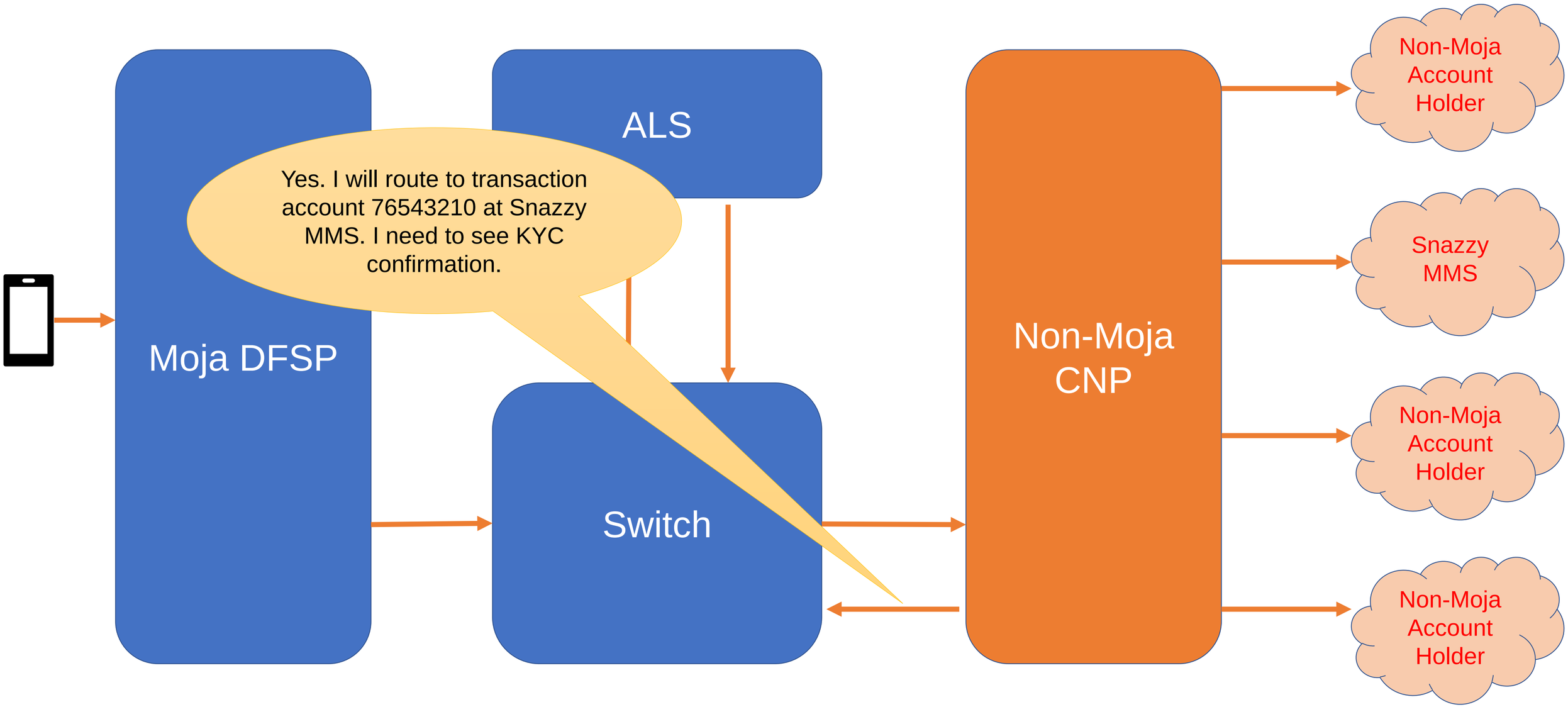

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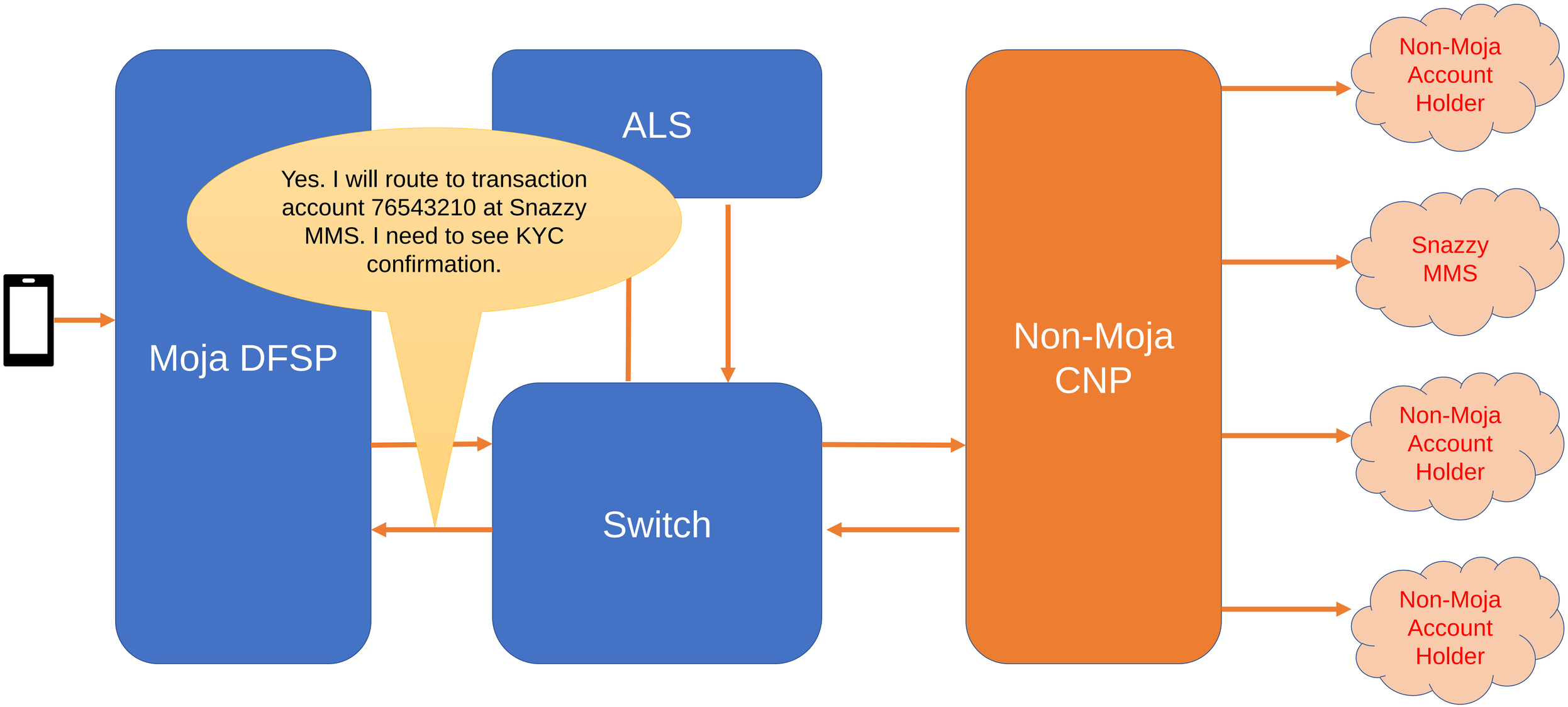

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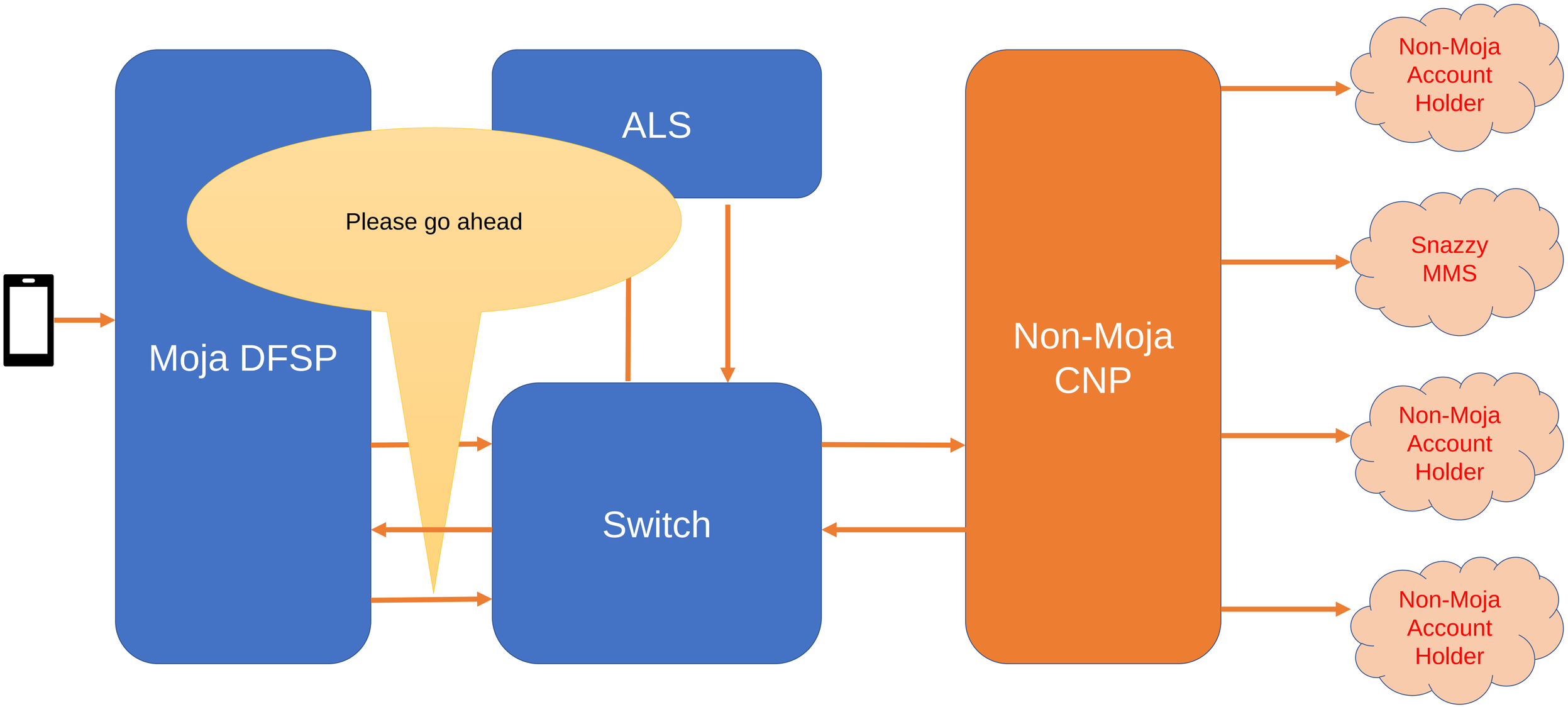

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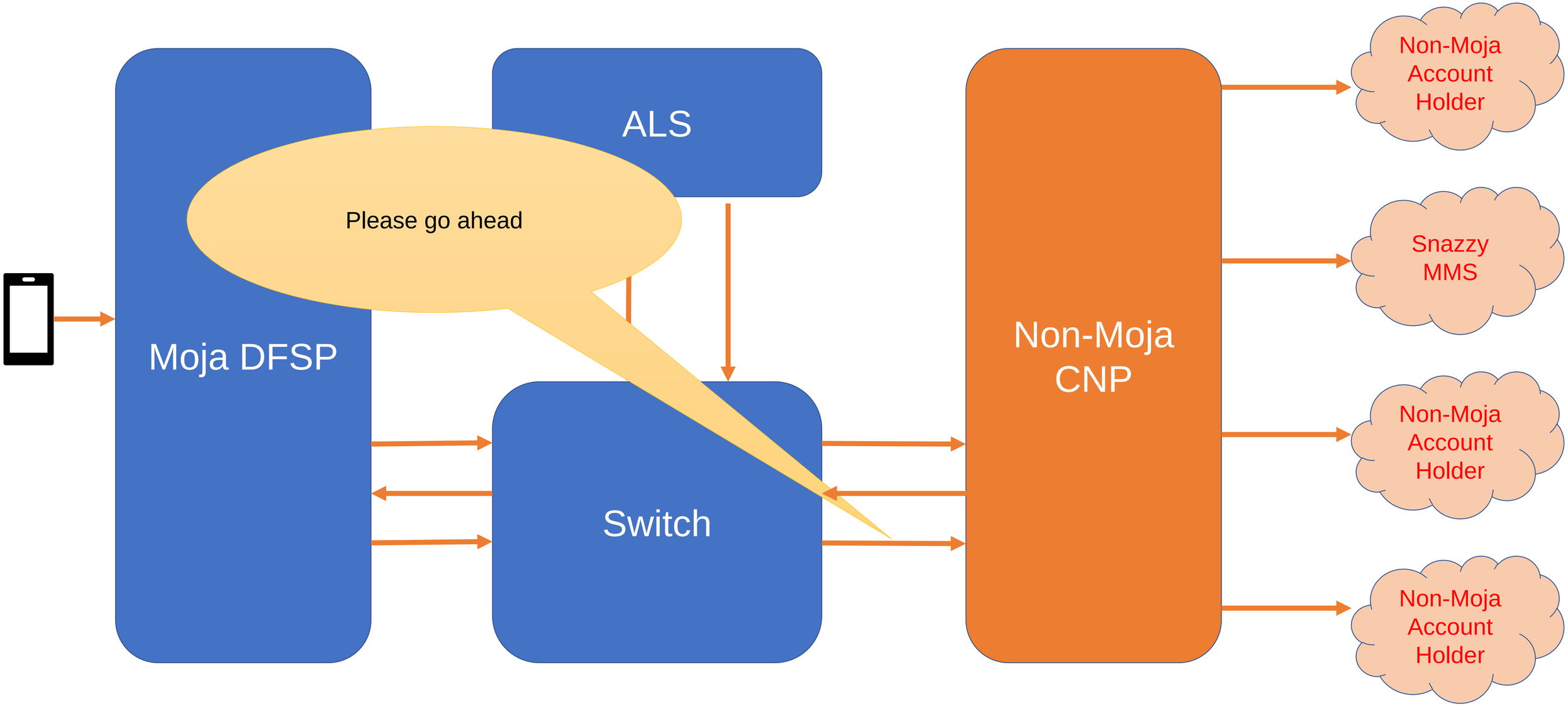

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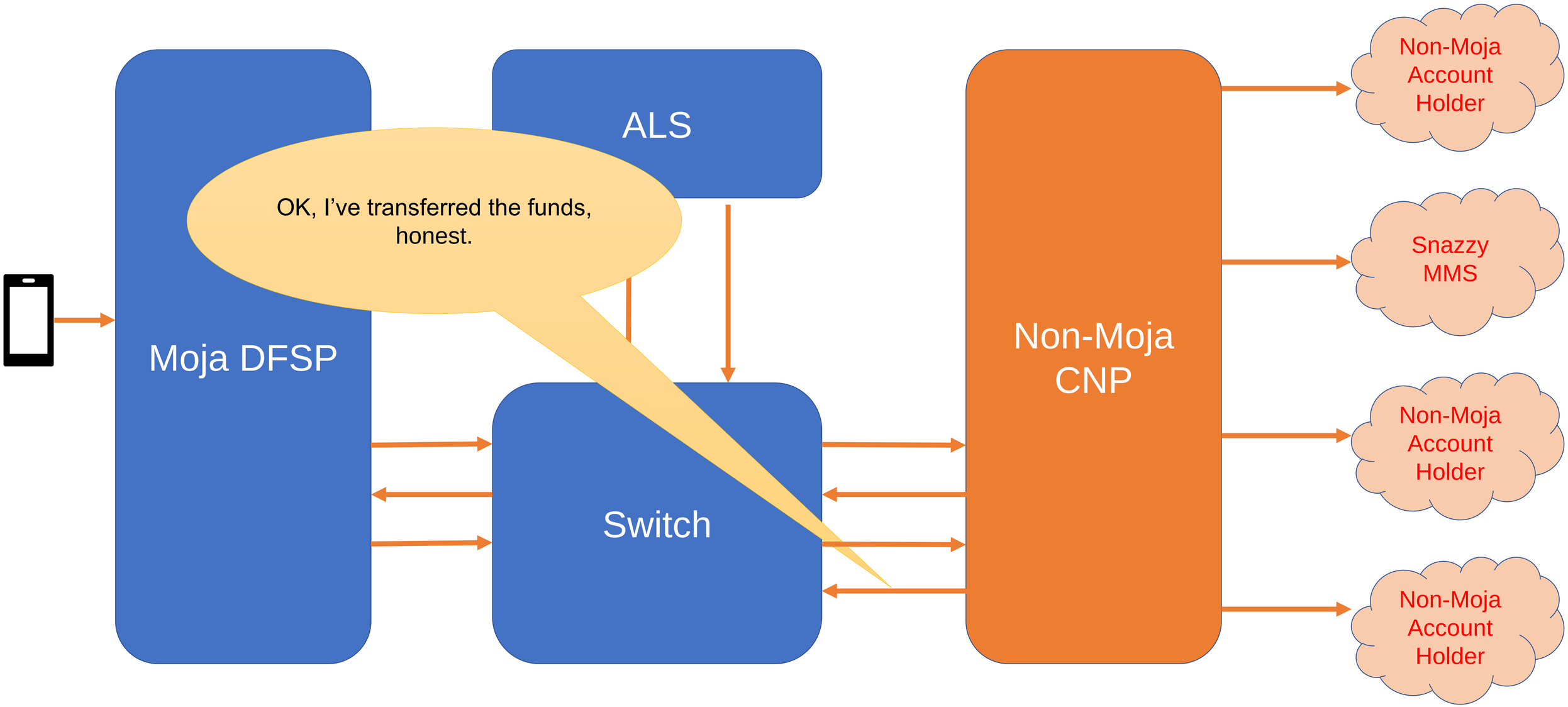

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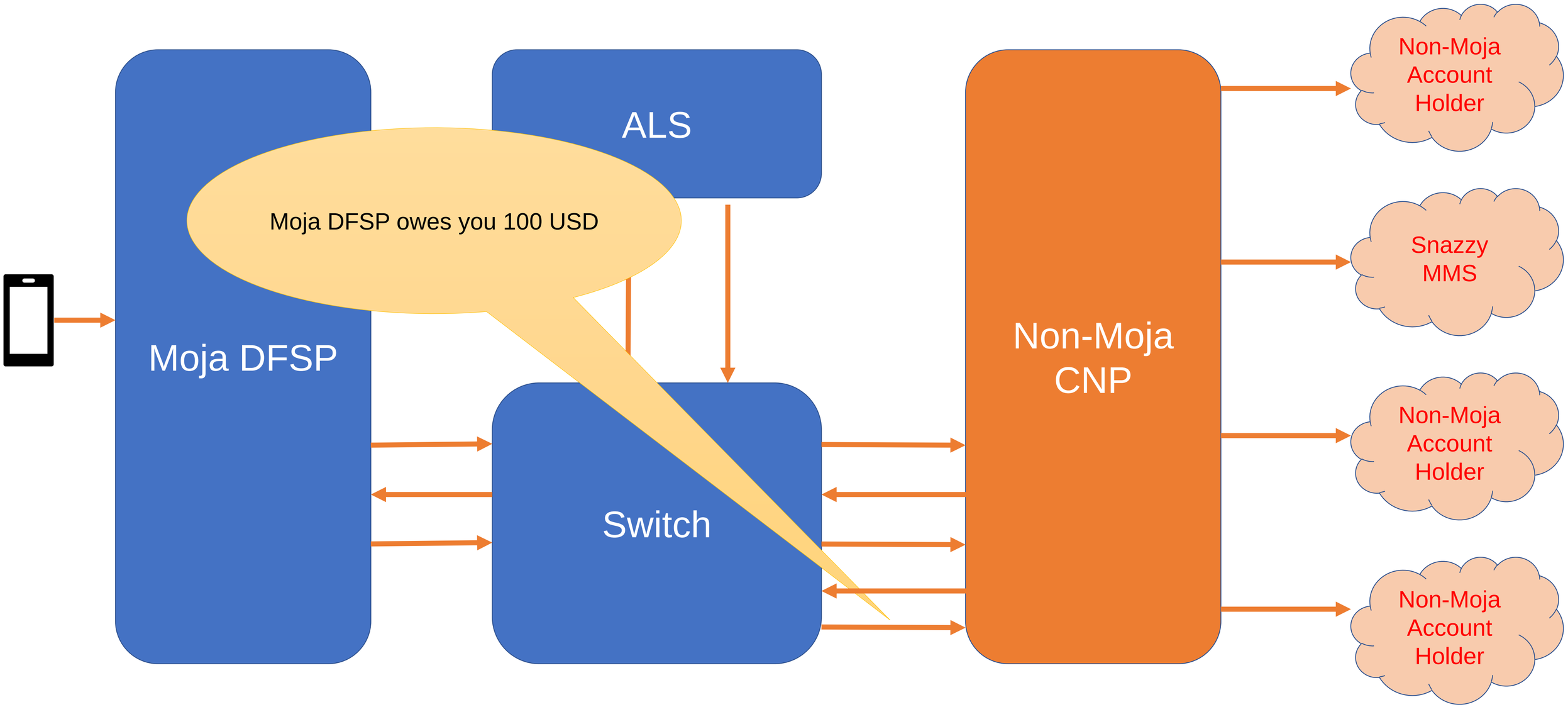


So essentially there are five issues here:

1. The CNP will need to support the Mojaloop Open API for a subset of operations.
2. The CNP will need to make a credible commitment to the Mojaloop scheme that it has in fact transferred the funds to a known account at a known FI within a specified time.
3. The CNP will need to provide reliable information to support its regulatory compliance requirements.
4. The CNP will need to participate in the Mojaloop settlement process.
5. The Mojaloop scheme's regulators (at least) will need to be comfortable with the arrangement

Supporting the Mojaloop API

What parts of the current API will a CNP have to support? (1)

- Issue and respond to requests to identify customers
  - **GET /parties** to identify payees in the Mojaloop switch
  - **PUT /parties** to confirm payees reachable through its network

What parts of the current API will a CNP have to support? (2)

- Issue quotation requests where its customers are paying a customer in the Mojaloop network
  - **POST /quotes**
- Respond to quotation requests where its customers are being paid by a customer in the Mojaloop network
  - **PUT /quotes**
- Enquire after the status of a quotation
  - **GET /quotes**

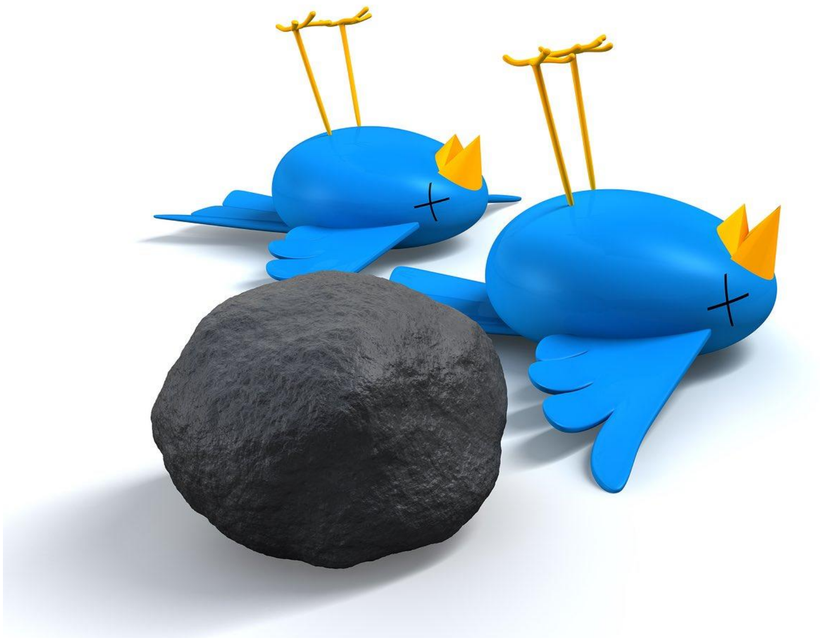
What parts of the current API will a CNP have to support? (3)

- Issue transfer requests where its customers are paying a customer in the Mojaloop network
  - **POST /transfers**
- Respond to transfer requests where its customers are being paid by a customer in the Mojaloop network
  - **PUT /transfers**
- Enquire after the status of a transfer
  - **GET /transfers**

What parts of the current API will a CNP not have to support?

- Maintaining the ALS for the scheme via the **/participants** resource
- Supporting Merchant Requests to Pay by initiating or responding to the **/transactionRequests** resource.
- Supporting requests for authorization via the **/authorizations** resource.
- Supporting bulk payments.
- Supporting PISP payments.

Attesting to funds transfer and providing KYC information



Proposal (1)

- A CNP which provides a gateway to a non-Mojaloop network may only transfer to *approved accounts* in that network
- An approved account specifically excludes:
  1. OTC transfers
  2. Transfers to unregistered MSISDNs which can be completed on registration
- These requirements will form part of the rules under whose terms the CNP is permitted to join the scheme.

Proposal (2)

- When a CNP which provides a gateway to a non-Mojaloop network receives a request for a *quotation*, it must include in its acceptance of that request sufficient information to enable the Mojaloop scheme reliably to identify the account which will eventually be credited with the funds.
- This information forms a warrant on the part of the CNP that it will transfer the funds in accordance with the requirements of the Mojaloop scheme which it belongs to.
- Although it does not form an immediate guarantee of successful transfer to the eventual recipient, it is intended to provide evidence of a commitment made by the CNP that can be used as evidence in case a dispute needs to be resolved.
- The commitment made by the CNP in this way can be made a condition of participation in the scheme by the scheme rules.

Proposal (3)

Reliable identification of an account includes:

1. An approved scheme-independent identifier for the DFSP that owns that account.
   - Scheme-independent identifiers might include:
     - BIC
2. An approved identifier type for the DFSP that owns the account
3. An identifier for the transaction account which will be the eventual recipient of the funds. This identifier should be of an approved type.
   - Approved identifier types might include:
     - IBAN
     - MSISDN
     - Account number
4. An identifier type for the transaction account
5. A statement of the timetable within which the CNP warrants to clear the funds if they are transferred.

Proposal (5)

The transfer process itself will not be different, except that:

- When the CNP returns the fulfilment to the other participants in the transfer, this will be accepted by them as a warranty that the funds have been transferred to the recipient’s transaction account named in the quotation response in the time frame specified.

This maps rather nicely onto: the Travel Rule

- Mandated by the USA for high value payments only
- Must be included in the payment instruction

Travel Rule contents

- For the payer:
  - Account holder’s full name
  - Account holder’s address
  - Account holder’s account identifier
  - Account holder’s financial institution
- For the payee:
  - Account holder’s full name
  - Account holder’s address
  - Account holder’s account identifier
  - Account holder’s financial institution
- The amount of the transfer
- The execution date of the transfer

How should accounts be identified?

- Mojaloop has tended to deprecate the use of actual account identifiers (though not MSISDNs) in favour of aliases (in all their forms) because:
  - They might be used to gain fraudulent access to the accounts
  - Possession of this information might expose the owner to potentially onerous privacy requirements (e.g. from PSD2)
- The use of aliases represents a different kind of risk:
  - An alias is converted to a reference to an actual transaction account by a party to the transfer (typically, but not necessarily, the DFSP who owns the account.)
  - The transaction account itself is therefore opaque to all other parties to the transfer.

Proposal (4)

- The CNP will include this information in the Transaction object for the response to the request for quotation, and it will form part of the information from which the cryptographic fulfilment and condition are generated.
- This will ensure that the veracity of the information can be tested in case of a dispute.

Settling

Settlement: the current situation

- When funds have cleared to the customer, no funds have yet moved between participants.
  - The payee institution has cleared funds to its customer on the promise that it will be reimbursed
  - The payee institution in this context is the CNP.
- The switch records the obligation of the payer to the payee.
- Each scheme has its own specific mechanism for settling these obligations, and the switch provides input to that process according to requests issued by scheme administrators

Settlement: the current situation

- Mojaloop does not concern itself with the actual mechanisms of settlement. These include:
  - What types of account are participants allowed or required to use for settlement?
  - What mechanisms are used to make transfers between those accounts?
  - Do these accounts contain commercial bank funds or central bank funds?
  - Are these accounts reserved for settlement or can they be used for other purposes?

Settlement: the current situation

- A CNP is currently expected to participate in the settlement processes implemented by the Mojaloop scheme in which they participate.
- There is a current assumption that every participant in settlement will be an account holder, or will have access to accounts of the type approved for use in settlements by the scheme.

Settlement: options

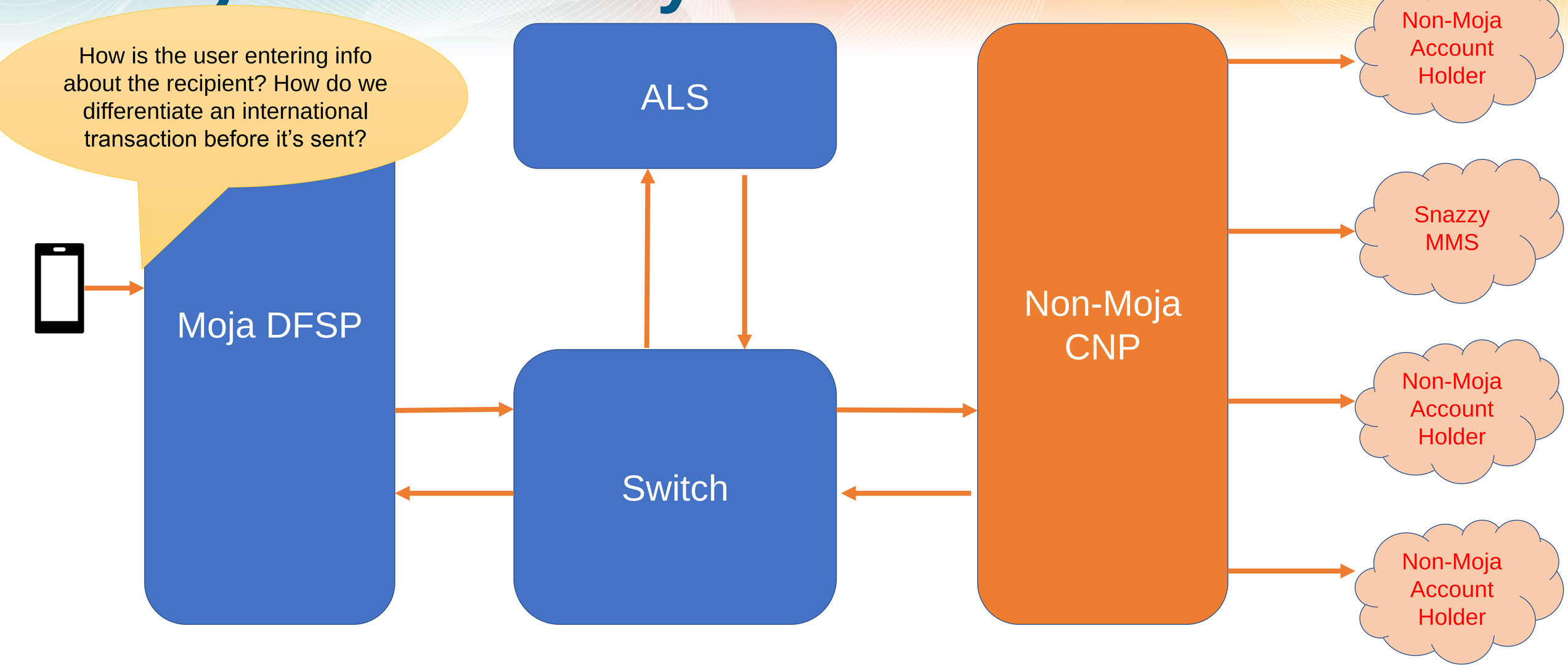
- Join whatever settlement structure the scheme operates.
- Form an arrangement with a DFSP which does belong to the scheme to provide settlement services for the CNP
- Create a specialised arrangement (either generic or specific) to allow the CNP to participate in settlement using its own bank accounts.

Regulatory Considerations for Mojaloop

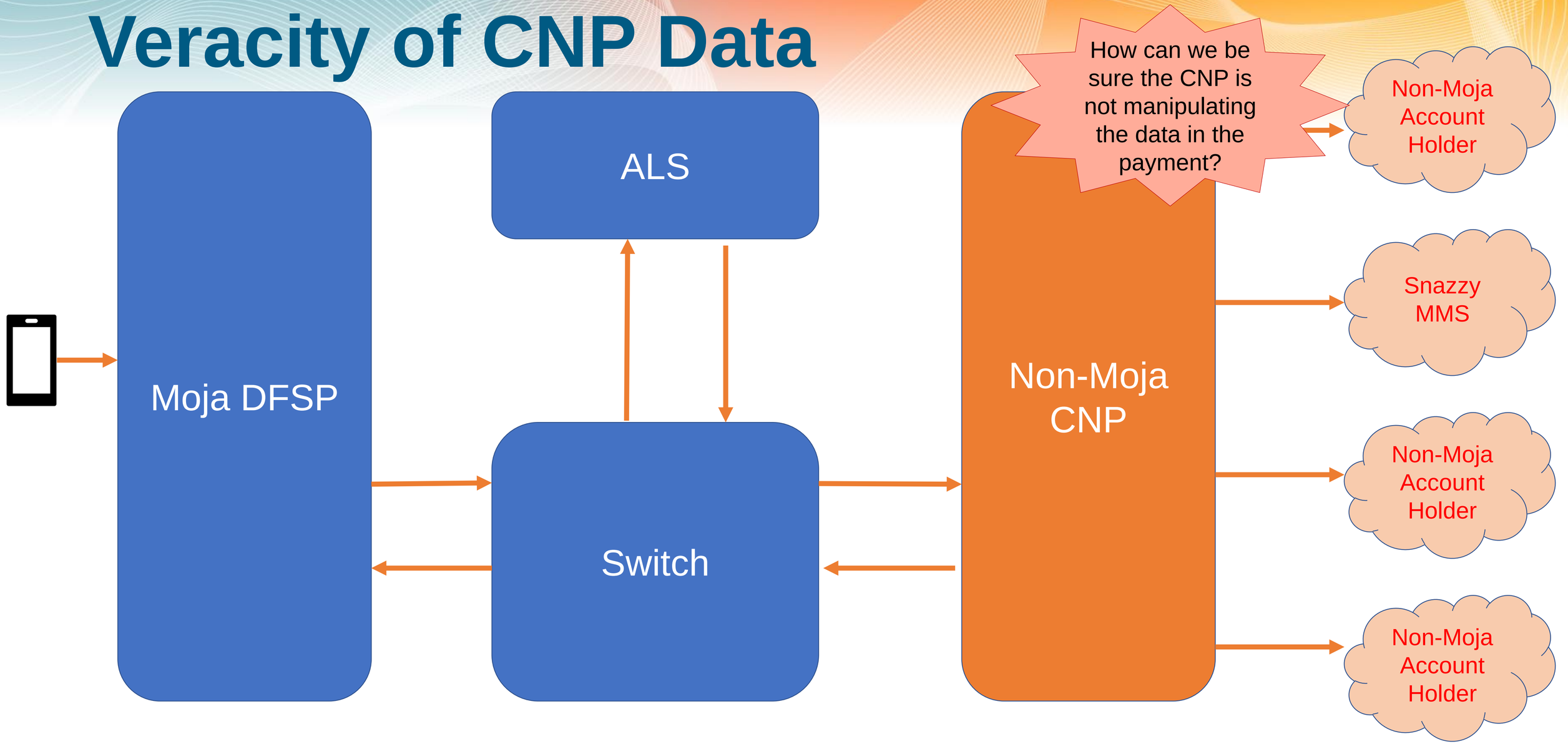
Regulatory Oversight

- Regulations protect against money laundering and the risk of terrorist financing
  - Travel Rule
    - Information (full name and address) about the payer and payee as well as information on the financial intermediaries must be transmitted with the payment
  - Wire Stripping Concerns
    - Information cannot be altered mid-stream

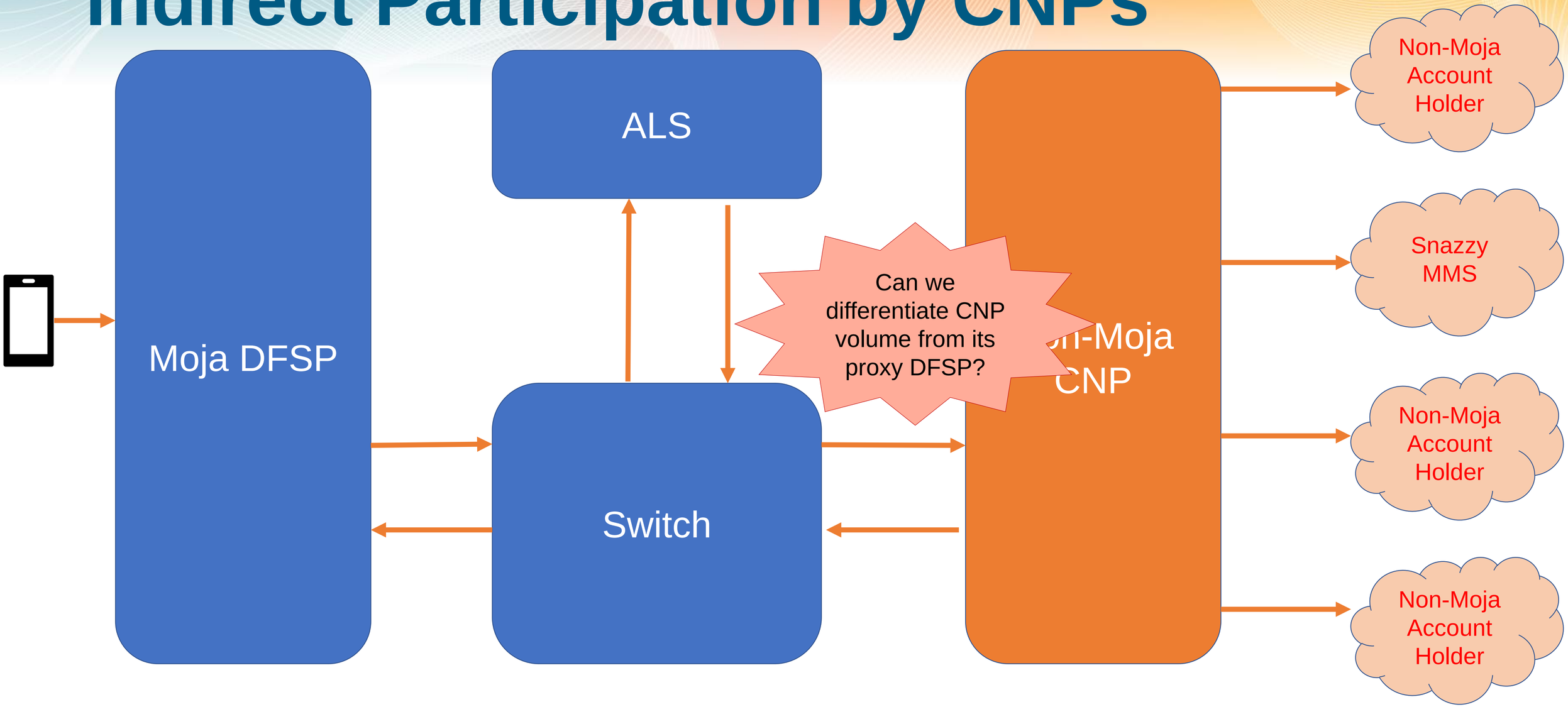
Payer Data Entry



Veracity of CNP Data



Indirect Participation by CNPs



Guarantees of CNPs Veracity

- Having a CNP self-attest its veracity may not be sufficient for regulators of a Mojaloop system
- Issues
  - A single bad-actor CNP could erode overall trust of the system by regulators across multiple jurisdictions
  - Mojaloop is open-source and does not mandate participation standards
- Options
  - Scheme runs minimum level of due diligence on CNPs, including regularly documenting licenses, notification for fines/ suspensions
  - Rules-based audit rights of CNPs
  - Third-party verification service for CNP address data

Potential Paths forward

- Expansion of the travel packet that flows with the transaction through all participants to:
  - Full address information of payer, payee, and financial intermediaries
  - Include scheme-independent identifier (e.g. BIC)
  - Allow for flexible address type
  - Transmit as text or fields
- Explore whether nonrepudability between CNPs and its own end points could be a mitigator of wire stripping
- Develop a core set of participation requirements for CNPs as part of the core rule set

Proposal

A CNP connected to a non-Mojaloop system should:

Technical issues:

- Implement the API described here.
- Include a Travel Rule data structure in the Transaction object returned in the **PUT /quotes** message.

A CNP connected to a non-Mojaloop system should:

Non-technical issues:

- Settle via a proxy who is a settling member of the Mojaloop scheme
- Abide by the rules of the Mojaloop scheme of which it is a member.

So our objective for this PI might be:

- Build a PoC of a Mojaloop switch interacting with a non-Mojaloop CNP (either real or fictitious.)

Any questions?