



BLOCKCHAIN COMMONS

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**GORDIAN ENVELOPE  
REQUEST & RESPONSE**

## INTRODUCTION TO ENVELOPE REQUEST & RESPONSE

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# WHAT IS REQUEST & RESPONSE?

- ▶ Gordian Envelope Functionality
- ▶ One Device Can Request from Another
- ▶ See the Implementation Guide
  - ▶ BCR 2024-04
  - ▶ <https://tinyurl.com/bcr-2024-004>

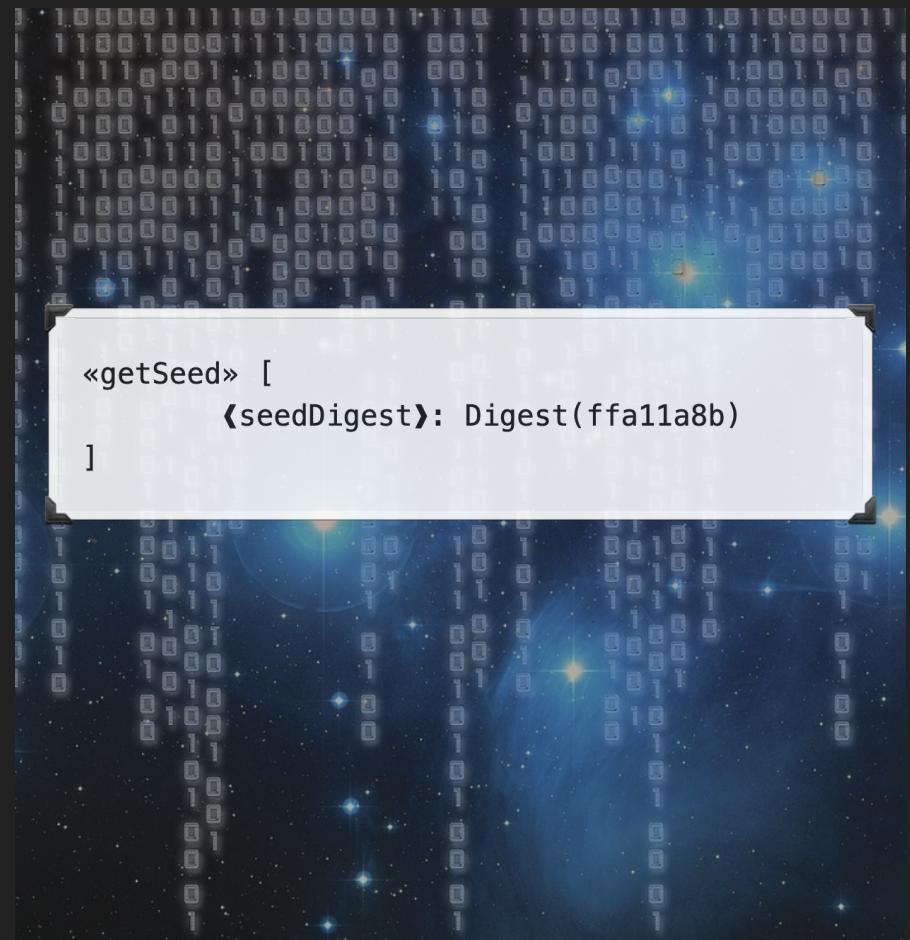


## INTRODUCTION TO ENVELOPE REQUEST & RESPONSE

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# REQUESTS ARE EXPRESSIONS

- ▶ Requests are Built on Expressions
  - ▶ A Function
  - ▶ With Zero or More Parameters
  - ▶ Each of Which Has an Argument

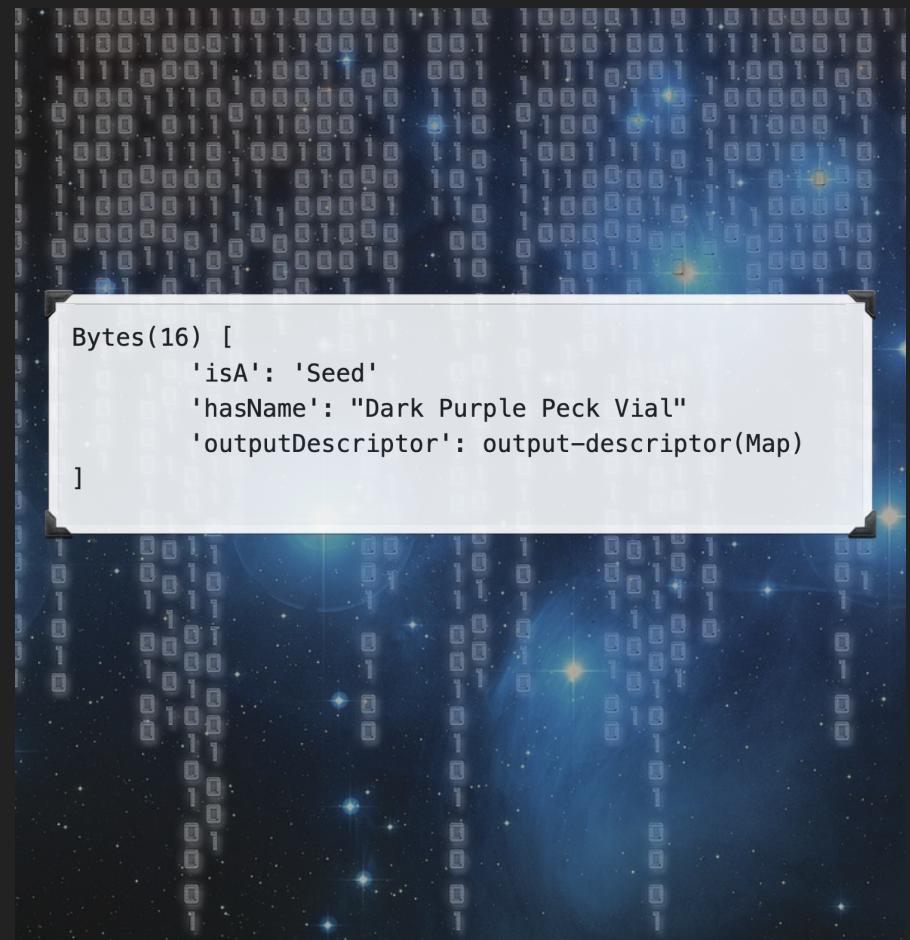


## INTRODUCTION TO ENVELOPE REQUEST & RESPONSE

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# RESULTS ARE DATA

- ▶ Results Return the Requested Object
- ▶ With a Defining `isA`
- ▶ And Maybe Other Metadata

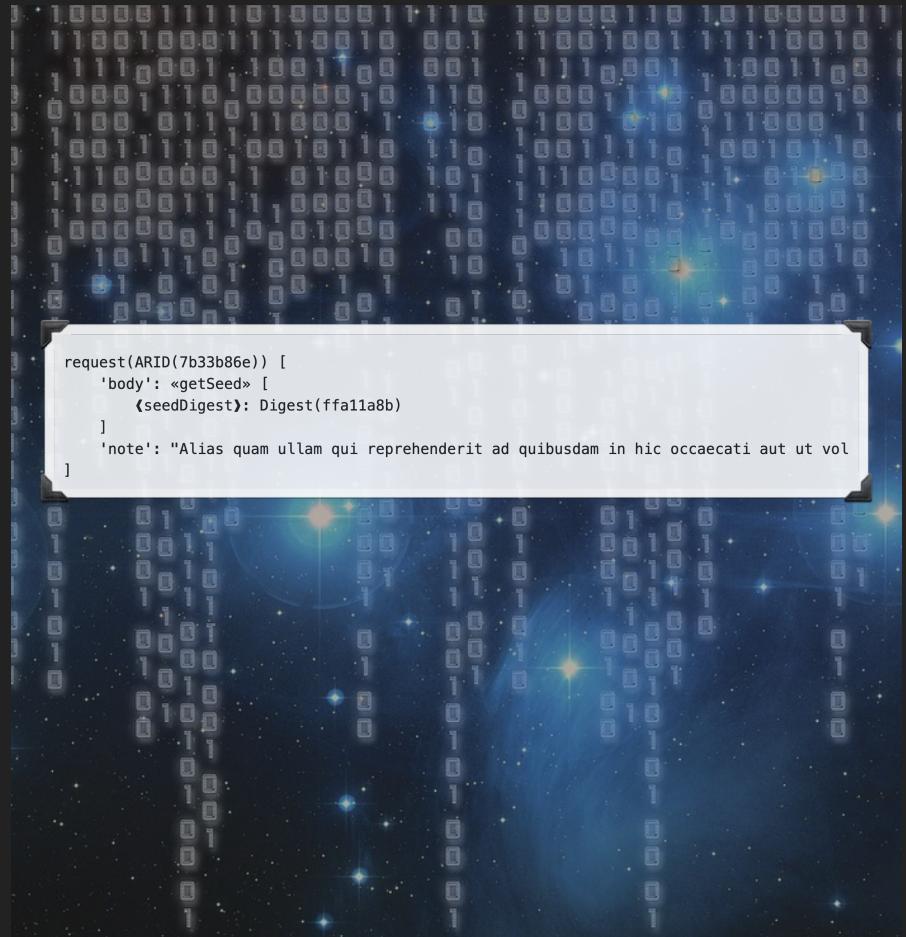


## INTRODUCTION TO ENVELOPE REQUEST & RESPONSE

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# A WRAPPED REQUEST

- ▶ Expressions and Results are Wrapped
- ▶ Marked with an ARID (Random ID)
- ▶ Expression is `body`
- ▶ Maybe Metadata Like a `note`
- ▶ This is How Expression & Data
- ▶ Become a Request & Response



## INTRODUCTION TO ENVELOPE REQUEST & RESPONSE

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# A WRAPPED RESPONSE

- ▶ Responses are Wrapped Too
- ▶ The Same ARID is Used
- ▶ Data is `result`

```
response(ARID(7b33b86e)) [  
    'result': Bytes(16) [  
        'isA': 'Seed'  
        'hasName': "Dark Purple Peck Vial"  
        'outputDescriptor': output-descriptor(Map)  
    ]  
]
```

## INTRODUCTION TO ENVELOPE REQUEST & RESPONSE

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# THERE ARE DETAILS

- ▶ Request/Response are Coded with CBOR tags
- ▶ `function`/`parameter` are Defined with Values
- ▶ Everything Uses Known Values
- ▶ It's All in the Implementation Guide!
- ▶ <https://tinyurl.com/bcr-2024-004>

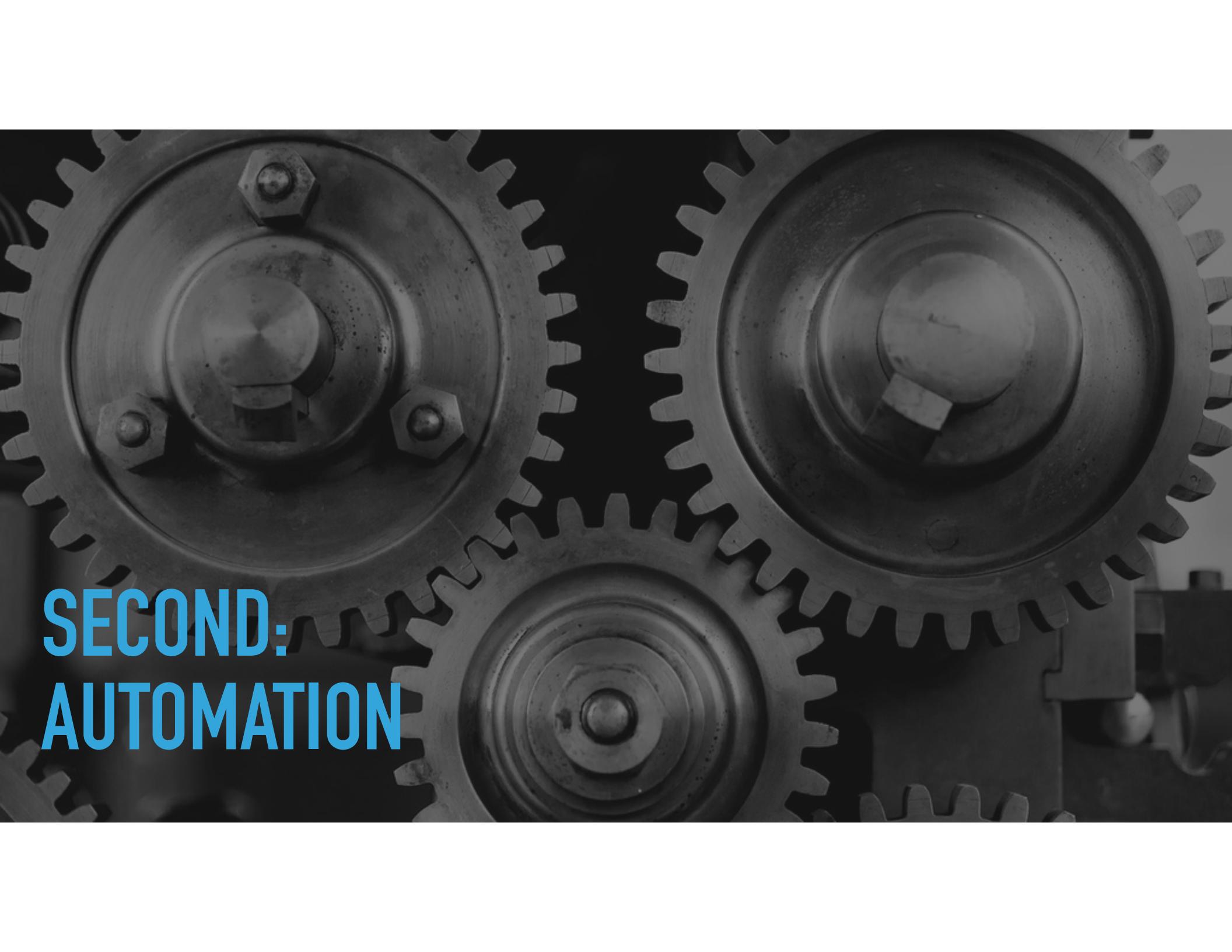


A photograph of a large satellite dish antenna against a clear blue sky. The dish is a light-colored, parabolic reflector mounted on a dark, cylindrical support structure. The background shows the intricate grid of cables and structural beams of a larger antenna tower.

**WHY WOULD YOU USE  
REQUEST & RESPONSE?**

# FIRST: INTEROPERABILITY





## SECOND: AUTOMATION

## THE MULTISIG USE CASE FOR ENVELOPE REQUEST & RESPONSE

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# NON-AUTOMATED COMPLEXITIES

1. Research Points (🧠)
  - User figures out how things work
2. Decision Points (💡)
  - User decides what to do
3. Human Actions (👤)
  - User pushes buttons

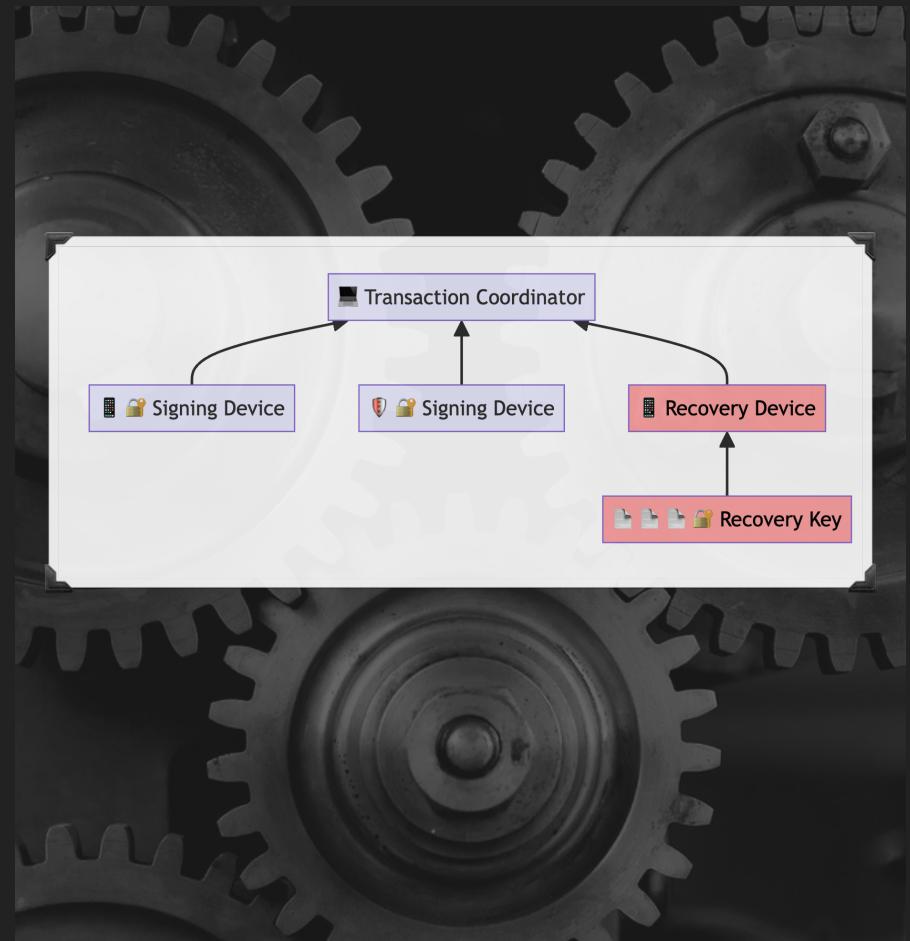


## THE MULTISIG USE CASE FOR ENVELOPE REQUEST & RESPONSE

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# AUTOMATING TASKS

- ▶ Creating Multisigs is a Clear Use Case
- ▶ We Want People to Use Multisigs
  - ▶ More Secure
  - ▶ No Single Points of Failure!
  - ▶ No Single Points of Compromise

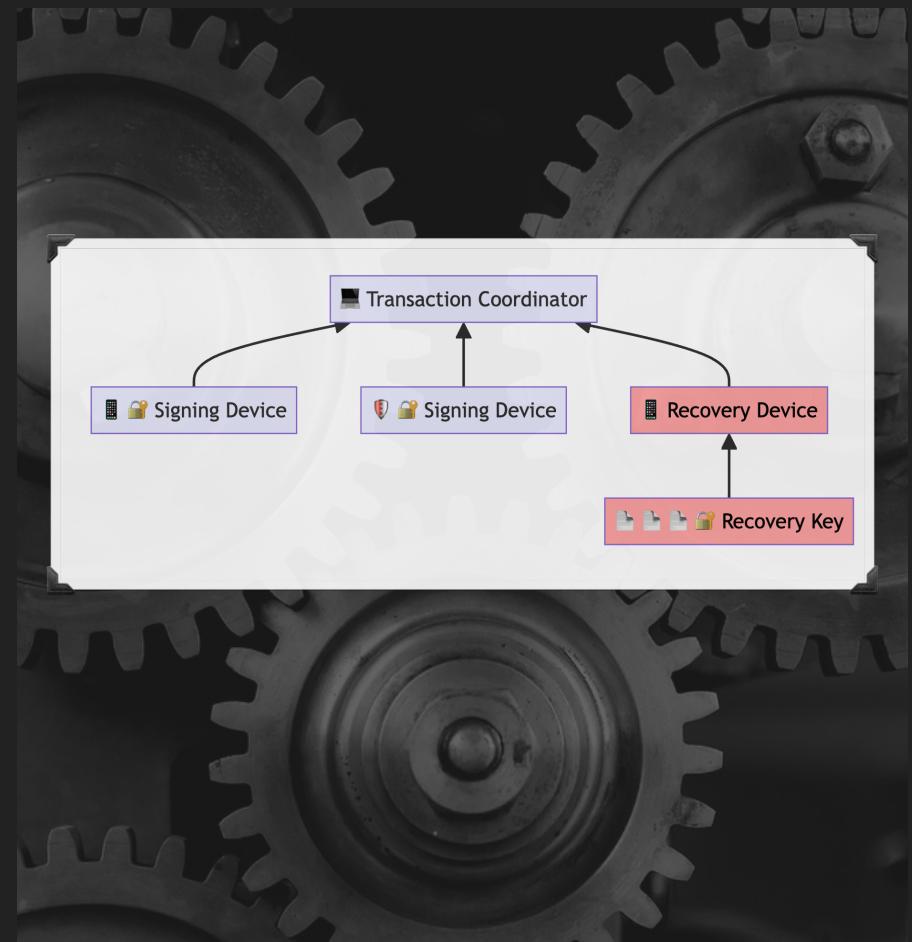


## THE MULTISIG USE CASE FOR ENVELOPE REQUEST & RESPONSE

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# AUTOMATING MULTISIGS

- ▶ We Wrote a Whole Scenario on Creating Multisigs
  - ▶ <https://tinyurl.com/multisigs>
- ▶ But It's Too Complex!

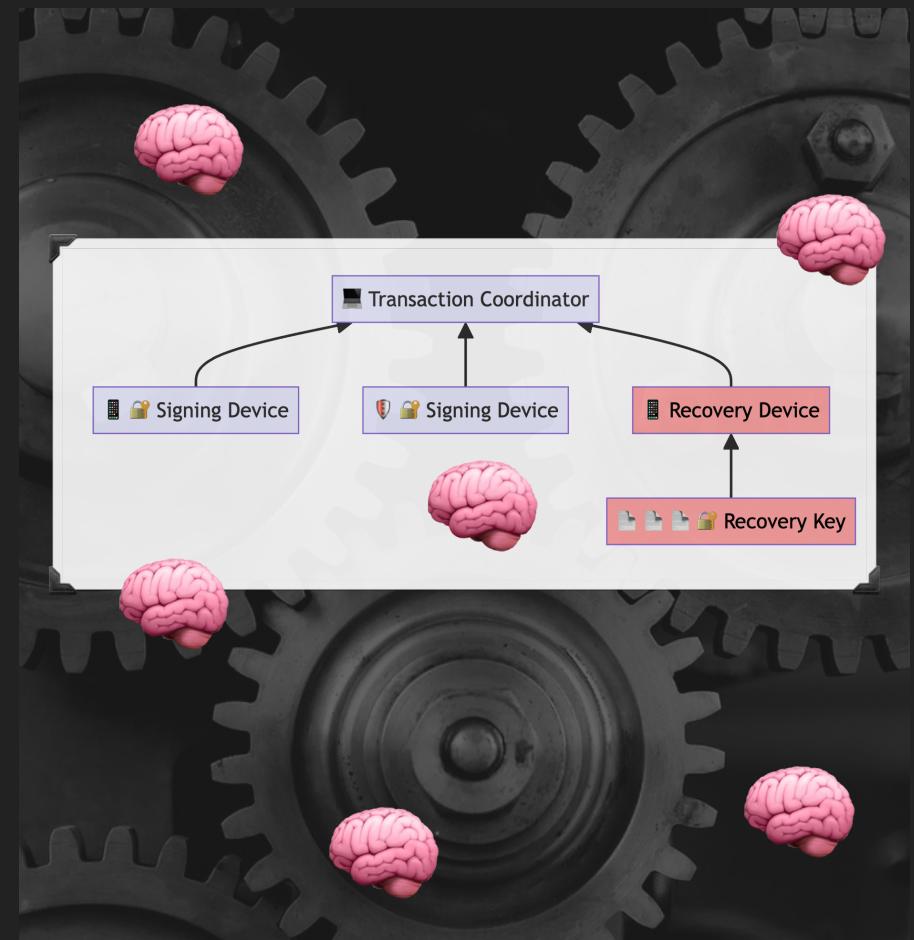


## THE MULTISIG USE CASE FOR ENVELOPE REQUEST & RESPONSE

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# NON-AUTOMATED MULTISIG

- ▶ User Has to **Know** a Procedure
- ▶ User Has to **Know** How Devices Work
- ▶ User Is a Knowledgeable **Conductor**

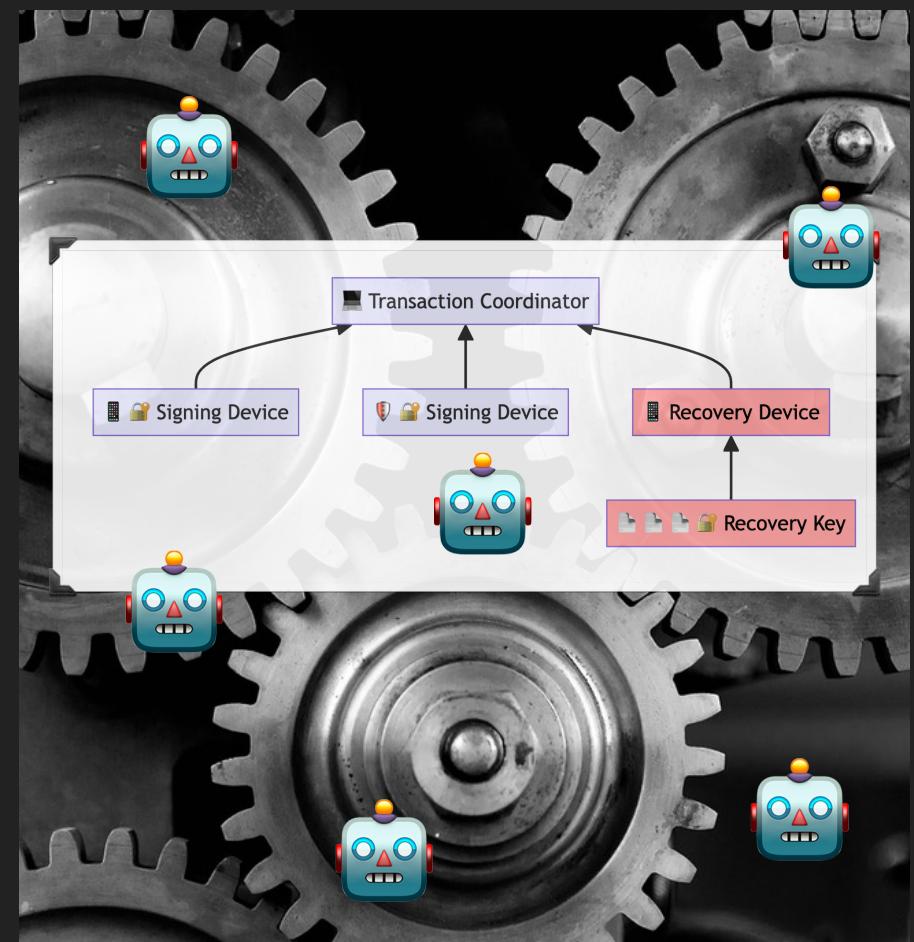


## THE MULTISIG USE CASE FOR ENVELOPE REQUEST & RESPONSE

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# AUTOMATED MULTISIG

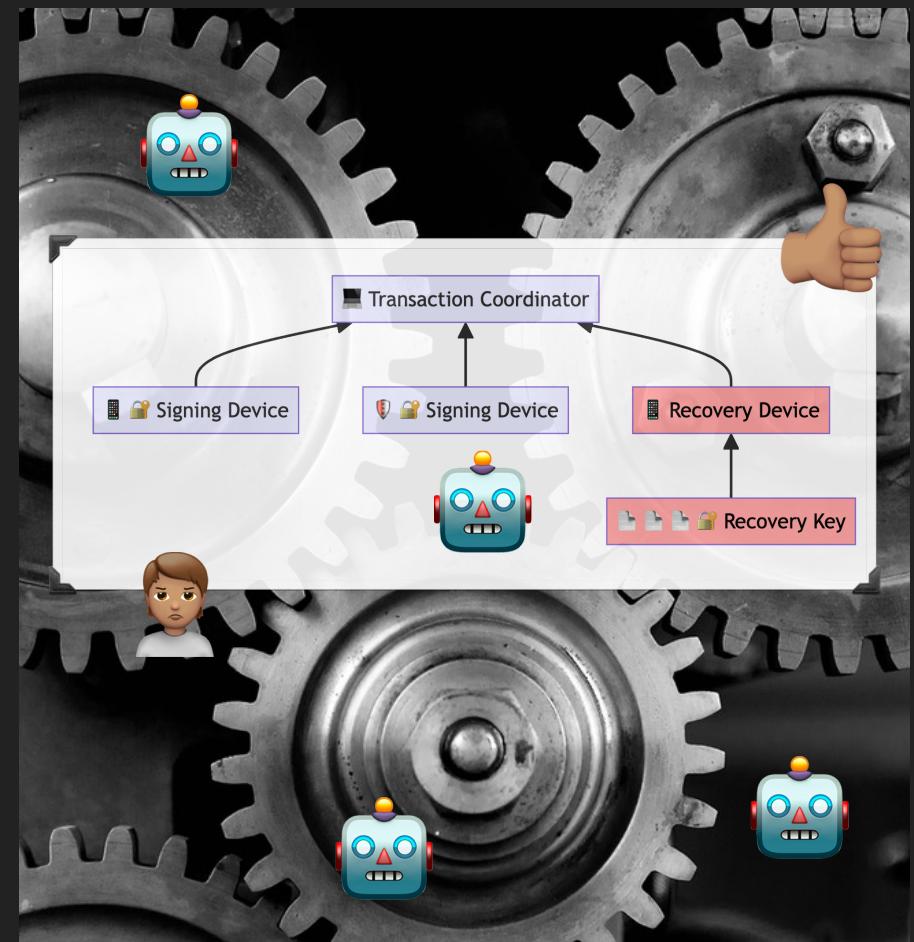
- ▶ Transaction Coordinator is **Conductor**
  - ▶ Centralizes Decisions
  - ▶ Tells The User What to Do
  - ▶ Communicates with Devices
    - ▶ Rather than the User Jumping Around
  - ▶ Tells the Devices What to Do
    - ▶ Rather than the User Having to Know

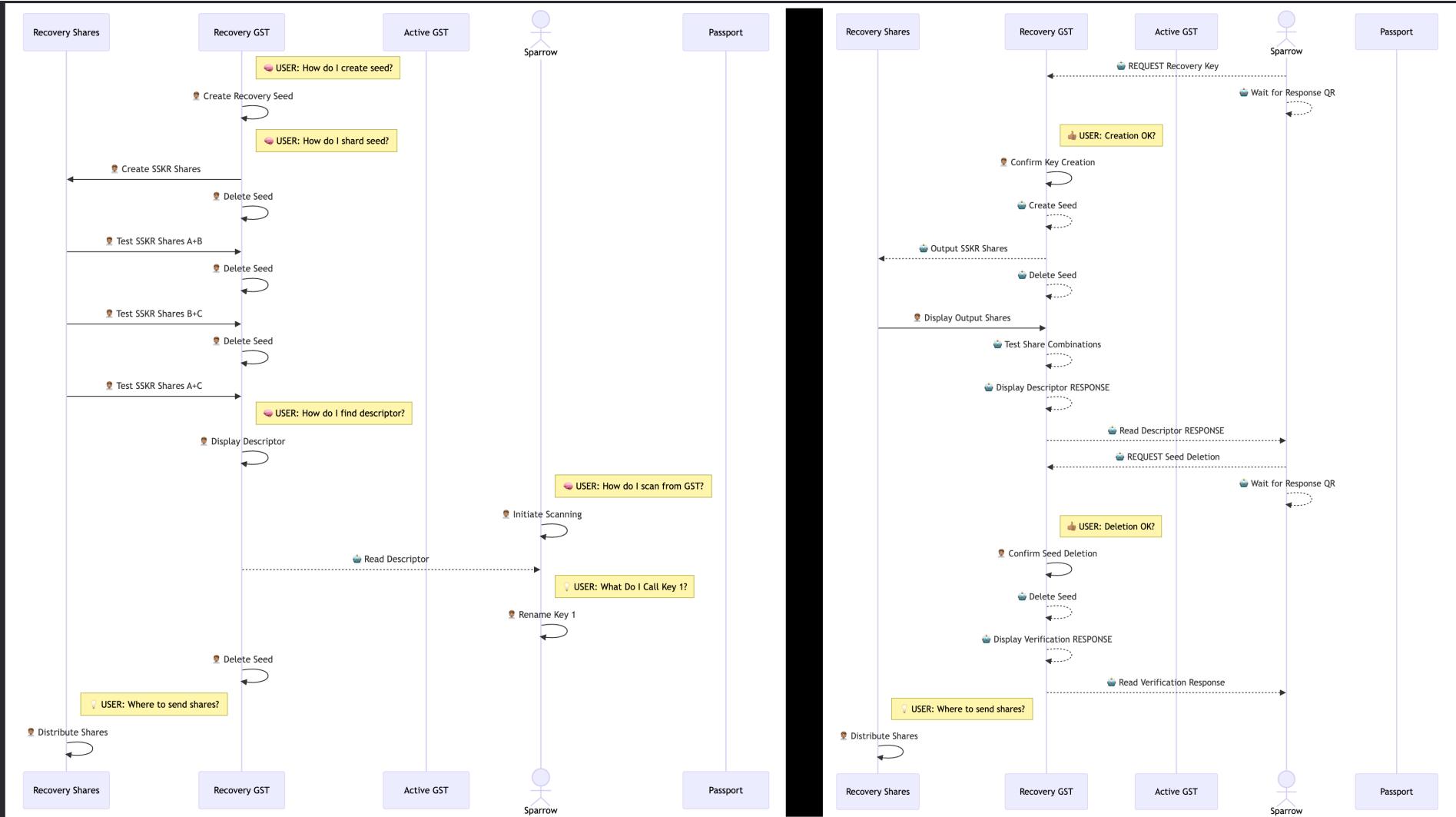


## THE MULTISIG USE CASE FOR ENVELOPE REQUEST & RESPONSE

# AUTOMATED MULTISIG WITH USER

- ▶ Transaction Coordinator is **Conductor**
  - ▶ But ...
- ▶ The User Confirms
- ▶ The User Takes Physical Actions





# TASK AUTOMATION

	<b>Classic</b>	<b>R/R</b>
Decision Points (💡)	5	2
Confirmation Points (👍)	0	6
Research Points (🧠)	11	1
Human Actions (👤)	31	14
Automated Actions (🤖)	5	33

## TASK SIMPLIFICATION

THE MULTISIG USE CASE FOR ENVELOPE REQUEST & RESPONSE

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## R/R ECOSYSTEM STARTS TODAY!

- ▶ Foundation Devices is Supporting Envelope & Request/Response for an Upcoming Project



- ▶ Join Us in Creating an Automated & Interoperable Ecosystem



## THE MULTISIG USE CASE FOR ENVELOPE REQUEST & RESPONSE

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# FOR MORE ON REQUEST & RESPONSE

- ▶ Take a Look at our Full Use Case:
  - ▶ In our Smart Custody Repo
  - ▶ <https://tinyurl.com/multisigs-rr>
- ▶ Implement with the Implementation Guide:
  - ▶ In our Research Repo
  - ▶ <https://tinyurl.com/multisigs>



