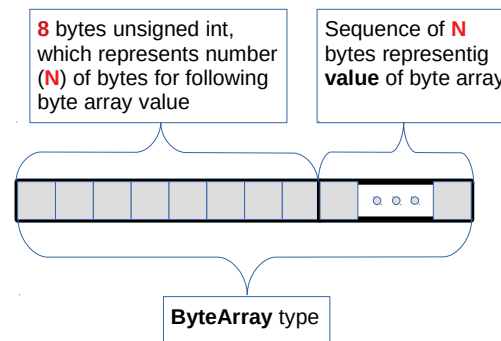


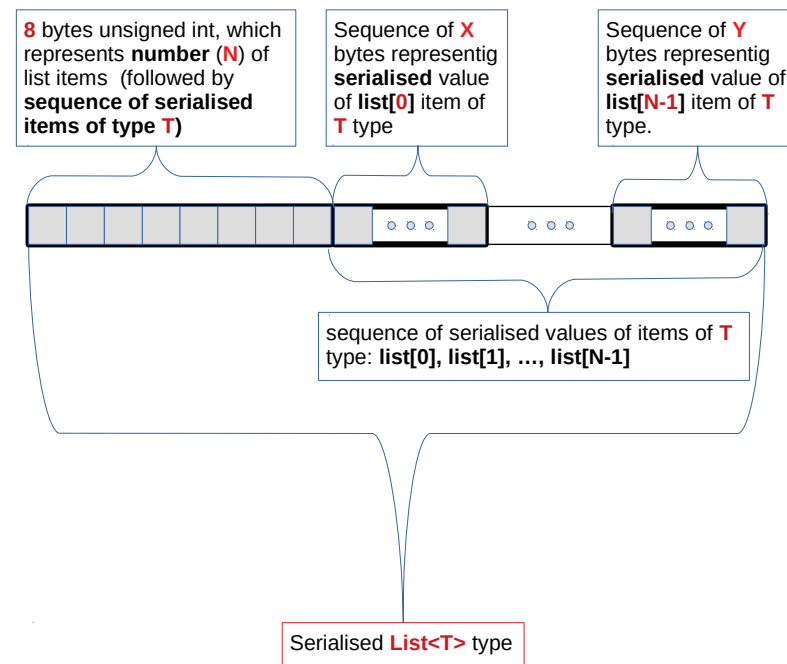
## Binary serialisation format of **ByteArray** type.

Serialised as sequence: [array length, value-of-byte-array] = [8 bytes unsigned int, sequence-of-bytes]



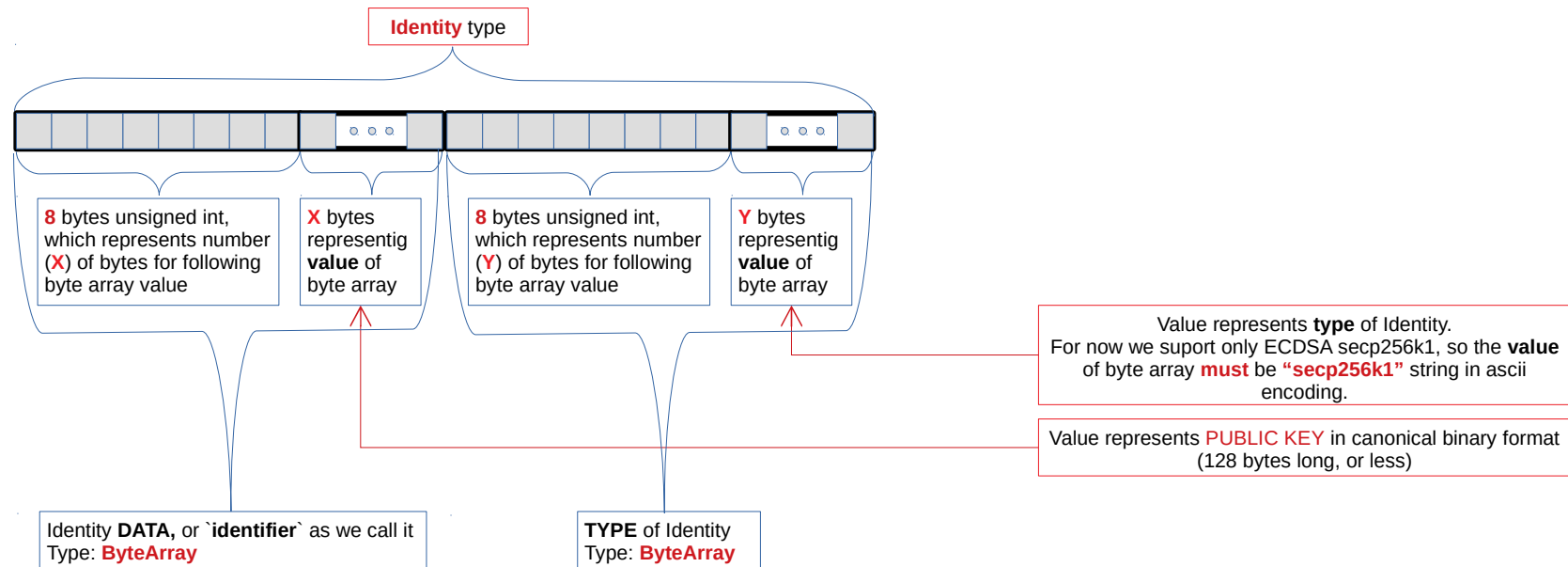
## Binary serialisation format of **List<T>** type (list of items of the same type **T**).

Serialised as sequence: [number-of-list-items (as 8 bytes unsigned int), sequence-of-serialised-items (all items of **T** type)]



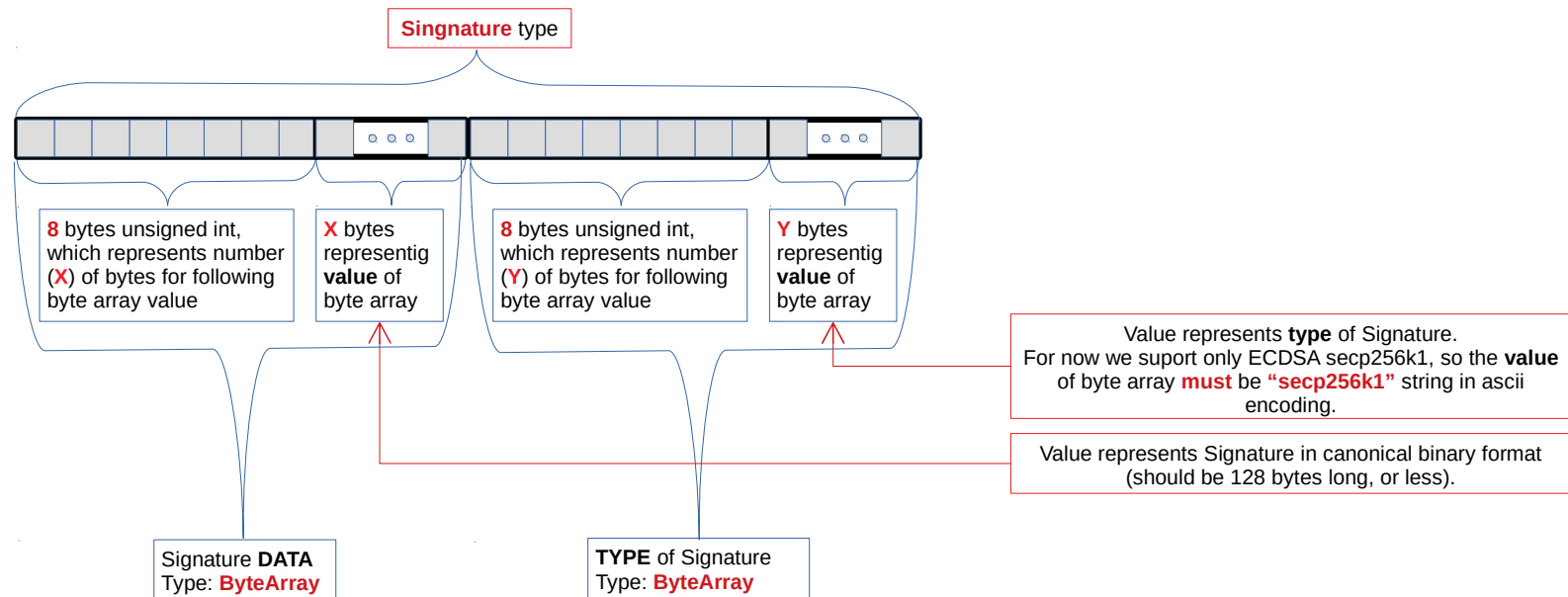
## Binary serialisation format of **Identity** type.

Serialised as sequence: [identifier data (as ByteArray), identity type data (as ByteArray)]



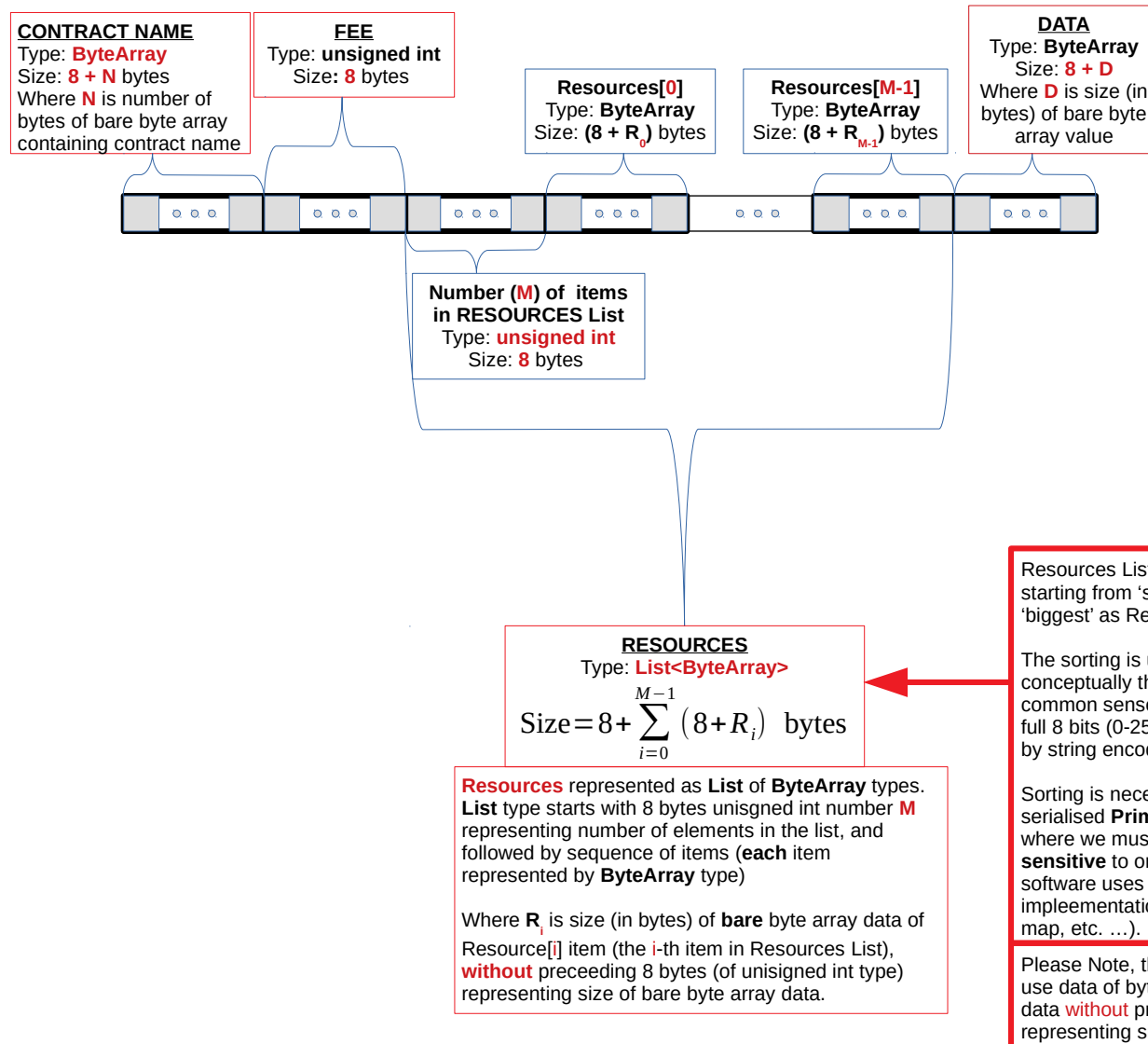
Binary serialisation format of **Signature** type (essentially the same structure as **Identity** type).

Serialised as sequence: [signature data, signature type data]



## Binary serialisation format of **Primary** Tx data.

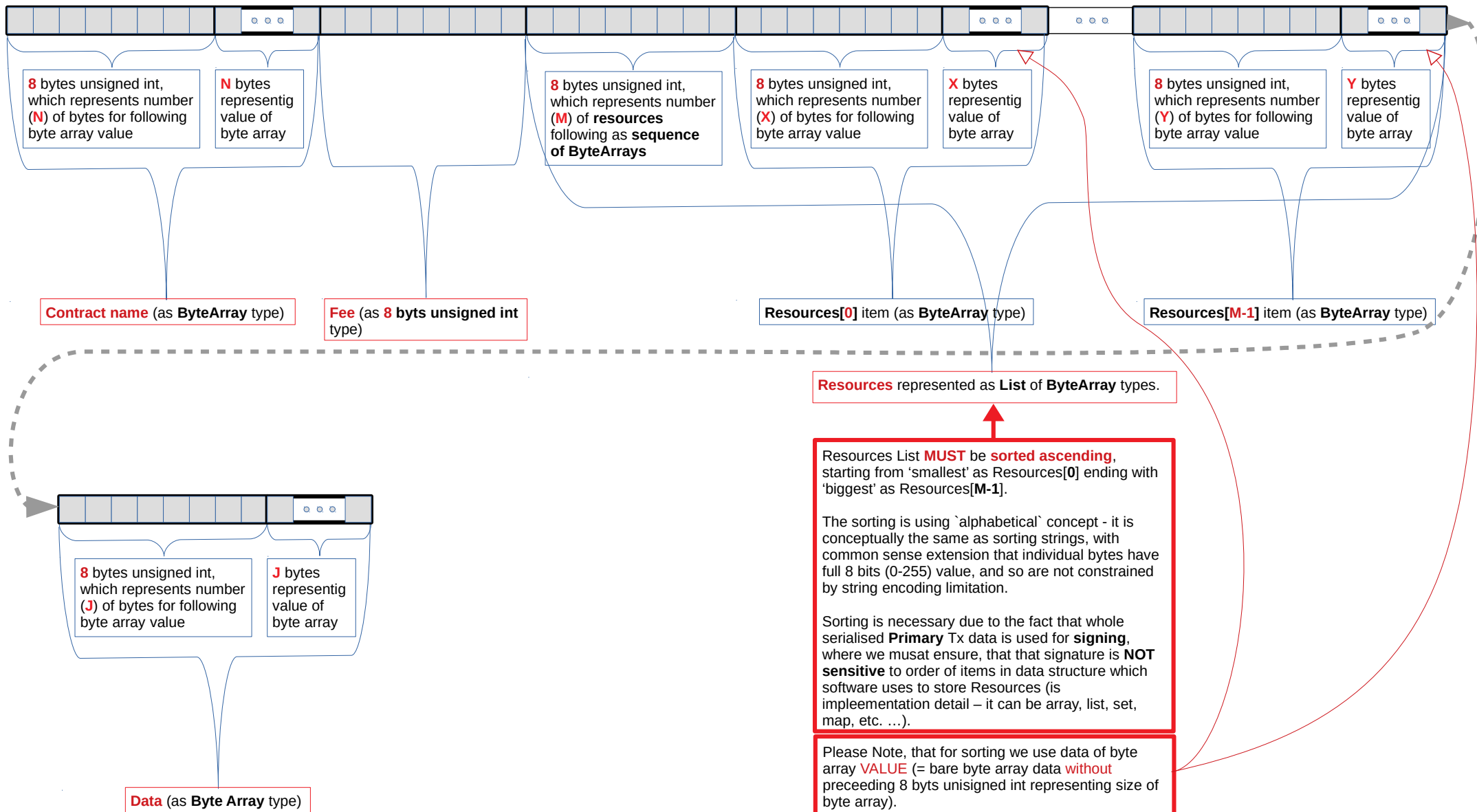
Serialised as sequence: [Contract name, Fee, Resources, Data]



# Binary serialisation format of **Primary** Tx data.

Serialised as sequence: [Contract name, Fee, Resources, Data]

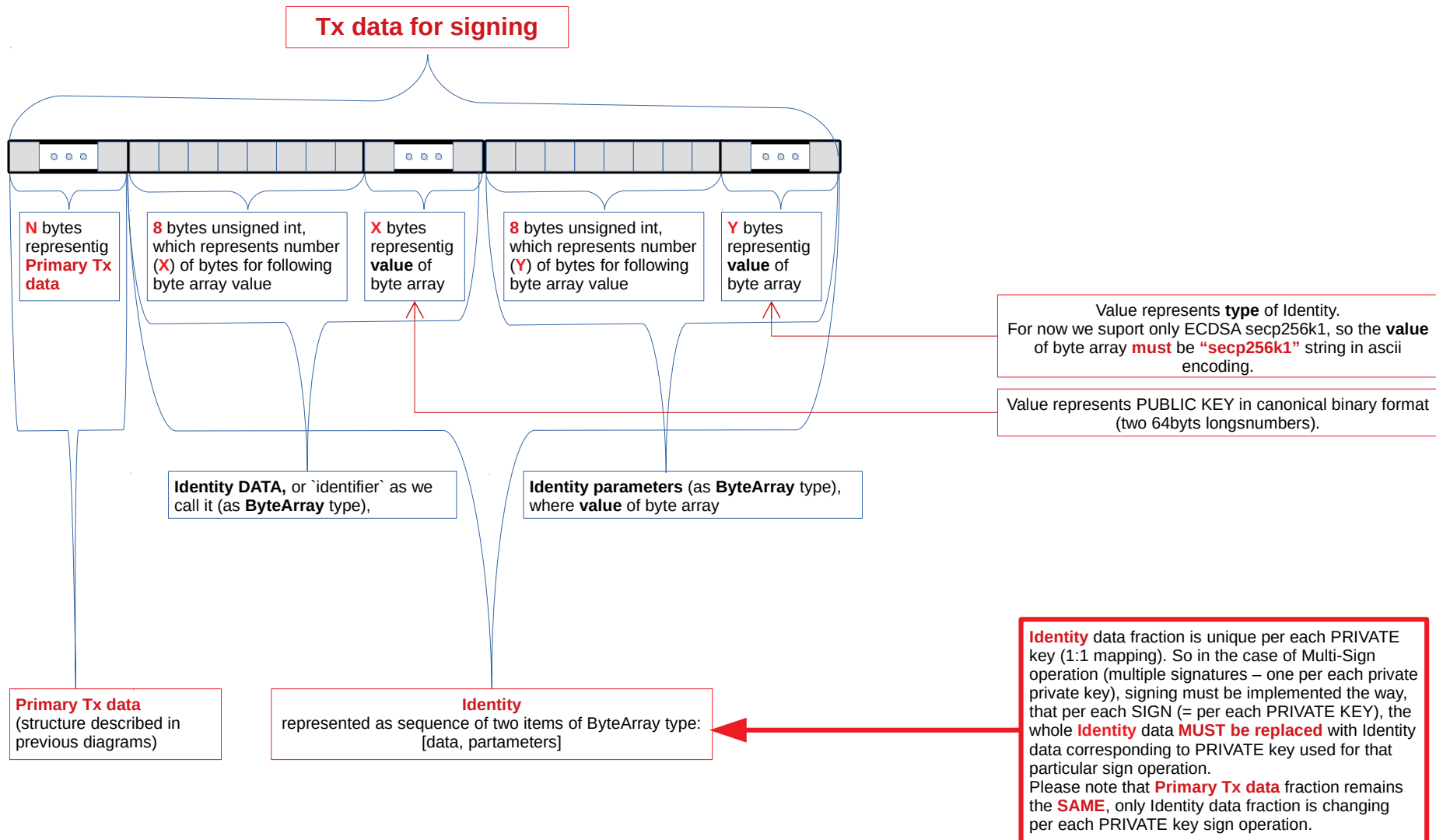
This is **EXPANDED DETAILED** description provided for convenience (compact description can be found on the previous diagram)



## Tx data for **SIGNING**

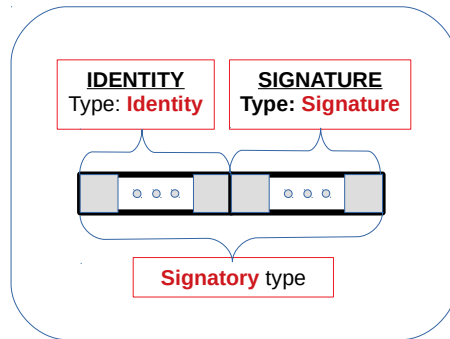
Serialised as sequence: [Primary Tx data, Identity] = [Contract name, Fee, Resources, Data, Identity]

Note: This data stream is used **EXCLUSIVELY** for signing procedure, it is **NOT** used as part Tx data wire format.



# Binary serialisation format of **Signatory** type.

Serialised as sequence: [Identity, Signature]

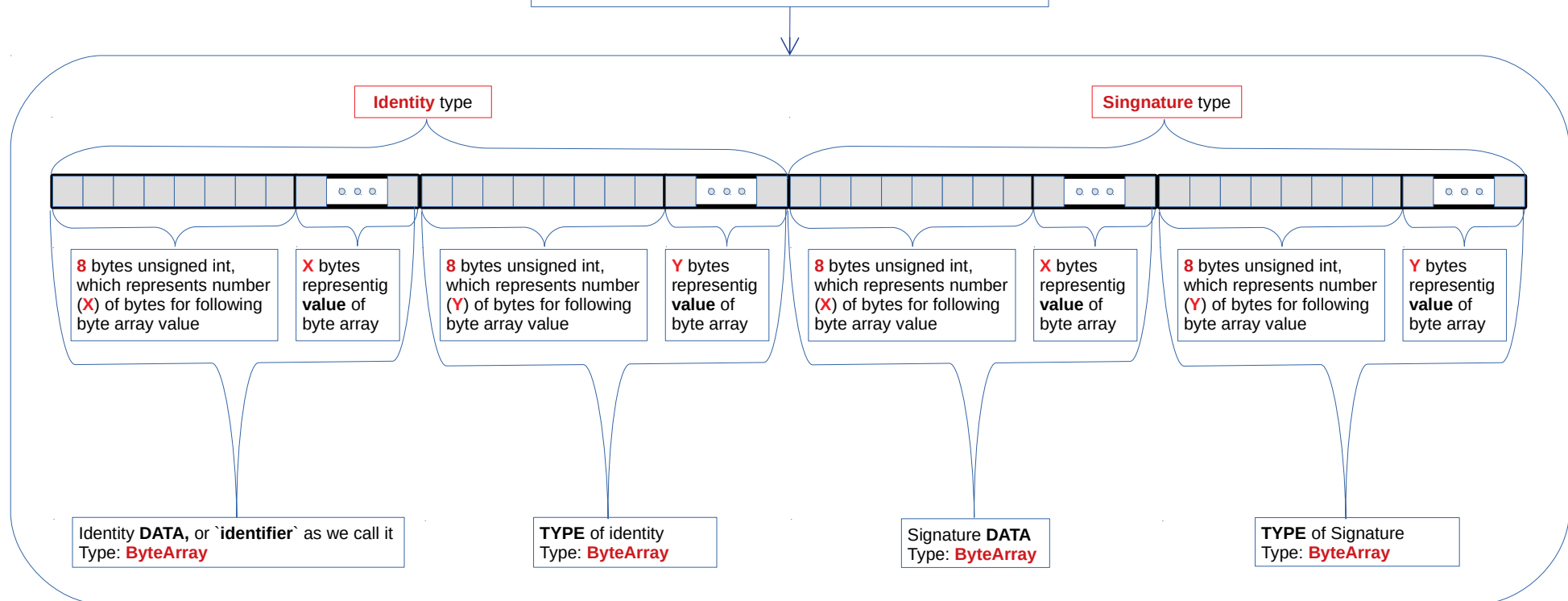


## High level structure of **Signatory** type.

Detailed structure of the **Identity** and **Signature** types can be found in previous slides, or for convenience, full expanded structure is drafted bellow

## Full Expanded structure of **Signatory** type.

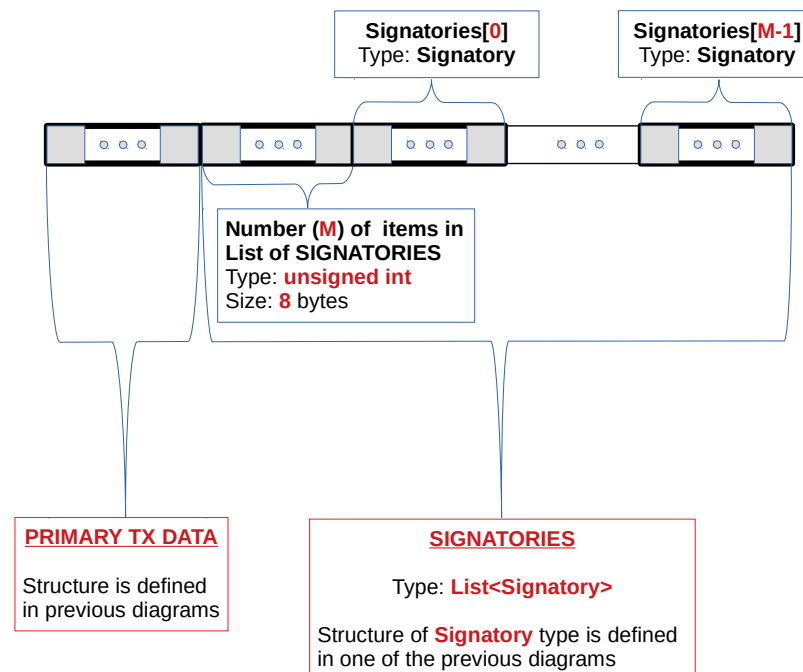
Provided just for convenience





## Binary serialisation format of **Tx Wire Data** structure.

Serialised as sequence: [Primary Tx data, List<Signatory>] = [Contract data, Fee, Resources, Data, List<Signatory>]



# Final encapsulation json format for Transaction Wire Data.

This final Tx Wire format (json) is what we actually call the **Transaction Wire Format**, since it is actually used to carry signed transaction across a `wire` (e.g. from client in to our system (node) via its public network interface).

**JSON SCHEMA of `Wire Format`** (**NON**-mandatory `metadata` section is solely for debugging pruposes => IF present it is completely **IGNORED** by production code)

```
{
  "ver": <STRING, mandatory, (it's value must be "1.0" for now)>,
  "data": <STRING, mandatory, (Base64 encoded Tx Wire Data)>,

  "metadata": <DICTIONARY, NON-mandatory> {
    "contract_name": <STRING, NON-mandatory>,
    "fee": <UNSIGNED INTEGER, NON-mandatory>,
    "resources": <LIST, NON-mandatory> [
      value_type=<STRING, Base Base64 encoded resource data>
    ],
    "data": <STRING, NON-mandatory, Base64 encoded contract data>,
    "signatores": <DICTIONARY, NON-mandatory> {
      key_type=<STRING, (Base64 encoded Identity data)> : value_type=<STRING, (Base64 encoded Signature data)>
    }
  }
}
```

**Example of real signed transaction in `Wire Format` (just mandatory data):**

```
{
  "ver": "1.0",
  "data": "FFAAAAAAAAABmZXRjaC50b2t1bi50cmFuc2ZlcgEAAAAAAAAAaGAAAAAAAAABZAAAAAAAAAEAAAAAAAAA+OL8XJK9fklu9GF1zli4QUkqQ0uvw4rJ5SjBxCe7t7tMv+wJqkb8+ekpbz/AAKrWivJuIuEyQ6WryV1XKs6nXakAAAAAAAAAAc2VjcDI1NmsxWQAAAAAAAAABAAAAAAAAAAP1HWLJKsz6E2Kh+bKw6H9fEixLMcBWu9XTPsks6u6vSFLjkBfvmwIYda2mggj81h3clSR6dTRfR0x+ZCnl4oYJAAAAAAAAAHNLy3AyNTZrMXQBAAAAAAAAAZXlKbWNT0XRJam9nSxwGQlFVRkJRvUzCUVVGRU9WSXhjRk5UY2swcmFFNXBiMlp0ZVh0UGFDOvLlRwX6VTNwSVFWMnlkbFL3ZWpkS1RfOXlkWE13YUZNME5VRll0eLZ6UTBkSVYzUndiMGxKTkM5T1dXUXpTbUpGwLc1VklGZ3daRTFtYlZGd05XVksSME5SUUVGQlFVRkJRvUzDZwXwWFRuZE5hbFV5WVhwRlBTSXNJQ0owYnllJnklDSlJRvUzCUVVGQlFVRkJSRFEwZG5oamEzSxhLMU5YTnpCWLdGaFBWMHhVUWxOVGNFUlR0aTlFYVh0dWJfDE5TRVZLTjNVemRUQjVMemRCYlhGU2RubzF0bE5zZGxBNFFVRnhkRmxwT0cwMGFUU1Vta1J3WVhaS1dGwmpjWHB4WkdORFVVRkJRvUzCUVVGQlFucGFWMdUzVfDwVkl1trJzSVDBpTENBaVlXMXZkVzUwSWpvZ01UQXdmUT09AQAAAAAAAAABAAAAAAAAAAP1HWLJKsz6E2Kh+bKw6H9fEixLMcBWu9XTPsks6u6vSFLjkBfvmwIYda2mggj81h3clSR6dTRfR0x+ZCnl4oYJAAAAAAAAAHNLy3AyNTZrMUAAAAAAAAAA37z9WvB10KrhRb4trQwwzBntqEhJIsCv0P1sB39kj40REZumS0kirZdFVHG/8vIfF7HpZ7R8WHTeeQZN8dkASAKAAAAAAAAAAc2VjcDI1Nmsx"
```

**Example of real signed transaction in `Wire Format` (including NON-mandatory `metadata` section):**

```
{
  "ver": "1.0",
  "data": "FAAAAAAAAAABmZXRjaC50b2t1bi50cmFuc2ZlcgEAAAAAAAAAaGAAAAAAAAABZAAAAAAAAAEAAAAAAAAA+OL8XJK9fklu9GF1zli4QUkqQ0uvw4rJ5SjBxCe7t7tMv+wJqkb8+ekpbz/AAKrWivJuIuEyQ6WryV1XKs6nXakAAAAAAAAAAc2VjcDI1NmsxWQAAAAAAAAABAAAAAAAAAAP1HWLJKsz6E2Kh+bKw6H9fEixLMcBWu9XTPsks6u6vSFLjkBfvmwIYda2mggj81h3clSR6dTRfR0x+ZCnl4oYJAAAAAAAAAHNLy3AyNTZrMXQBAAAAAAAAAZXlKbWNT0XRJam9nSxwGQlFVRkJRvUzCUVVGRU9WSXhjRk5UY2swcmFFNXBiMlp0ZVh0UGFDOvLlRwX6VTNwSVFWMnlkbFL3ZWpkS1RfOXlkWE13YUZNME5VRll0eLZ6UTBkSVYzUndiMGxKTkM5T1dXUXpTbUpGwLc1VklGZ3daRTFtYlZGd05XVksSME5SUUVGQlFVRkJRvUzDZwXwWFRuZE5hbFV5WVhwRlBTSXNJQ0owYnllJnklDSlJRvUzCUVVGQlFVRkJSRFEwZG5oamEzSxhLMU5YTnpCWLdGaFBWMHhVUWxOVGNFUlR0aTlFYVh0dWJfDE5TRVZLTjNVemRUQjVMemRCYlhGU2RubzF0bE5zZGxBNFFVRnhkRmxwT0cwMGFUU1Vta1J3WVhaS1dGwmpjWHB4WkdORFVVRkJRvUzCUVVGQlFucGFWMdUzVfDwVkl1trJzSVDBpTENBaVlXMXZkVzUwSWpvZ01UQXdmUT09AQAAAAAAAAABAAAAAAAAAAP1HWLJKsz6E2Kh+bKw6H9fEixLMcBWu9XTPsks6u6vSFLjkBfvmwIYda2mggj81h3clSR6dTRfR0x+ZCnl4oYJAAAAAAAAAHNLy3AyNTZrMUAAAAAAAAAA37z9WvB10KrhRb4trQwwzBntqEhJIsCv0P1sB39kj40REZumS0kirZdFVHG/8vIfF7HpZ7R8WHTeeQZN8dkASAKAAAAAAAAAAc2VjcDI1Nmsx",
  "metadata": {
    "contract_name": "fetch.token.transfer",
    "fee": 1,
    "resources": [ "QAAAAAAAAAD9R1pSSrM+hNiofmys0h/XxIsSzHAVrvV0z7JL0rur0hS45AX75sCGHwtpoII4/Nyd3JbEenU0X0dMfmQp5eKGCQAAAAAAAAABzZWNwMju2azE=",
"QAAAAAAAAAAD4vxckr1+SW70YXXOWLhBSSpDS6/DisnlKMHEJ7u3u0y/7AmqRvz56SLvP8AAqtYi8m4i4TJDpavJXVcqzqdcQAAAAAAAAABzZWNwMju2azE="],
    "data": "ZxlKbWNT0XRJam9nSxwGQlFVRkJRvUzCUVVGRU9WSXhjRk5UY2swcmFFNXBiMlp0ZVh0UGFDOvLlRwX6VTNwSVFWMnlkbFL3ZWpkS1RfOXlkWE13YUZNME5VRll0eLZ6UTBkSVYzUndiMGxKTkM5T1dXUXpTbUpGwLc1VklGZ3daRTFtYlZGd05XVksSME5SUUVGQlFVRkJRvUzDZwXwWFRuZE5hbFV5WVhwRlBTSXNJQ0owYnllJnklDSlJRvUzCUVVGQlFVRkJSRFEwZG5oamEzSxhLMU5YTnpCWLdGaFBWMHhVUWxOVGNFUlR0aTlFYVh0dWJfDE5TRVZLTjNVemRUQjVMemRCYlhGU2RubzF0bE5zZGxBNFFVRnhkRmxwT0cwMGFUU1Vta1J3WVhaS1dGwmpjWHB4WkdORFVVRkJRvUzCUVVGQlFucGFWMdUzVfDwVkl1trJzSVDBpTENBaVlXMXZkVzUwSWpvZ01UQXdmUT09",
    "signatores": {
      "QAAAAAAAAAD9R1pSSrM+hNiofmys0h/XxIsSzHAVrvV0z7JL0rur0hS45AX75sCGHwtpoII4/Nyd3JbEenU0X0dMfmQp5eKGCQAAAAAAAAABzZWNwMju2azE=": "QAAAAAAAAADfvP1a8HXQquGsHi2tDDDMGe2oSEkiwK84/WwHf2SPjRERm6Zi6SKtL0VUcb/y8h8XseLntHxYdN55Bk3x2QBICQAAAAAAAAABzZWNwMju2azE="
    }
  }
}
```