

Node: Event-Notary

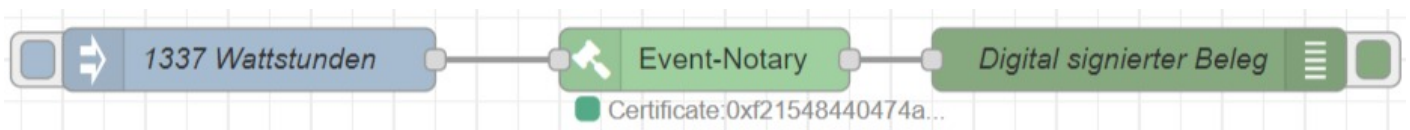
Erstellung von Belegen für den Strombezug basierend auf Ereignissen (Beispiel: Ladevorgang eines E-Auto).



Im Gegensatz zum Node "Metered-Notary", wird beim Event-Notary ein Stromverbrauch in Wattstunden für einen Vorgang als Eingabenachricht erwartet. Das Ergebnis ist ein digital signierter Beleg, des [Zertifizierungsdienstes](#), welcher in der Ausgabenachricht bereitgestellt wird. Zusätzlich wird eine Kopie des Beleges in die [GHG Wallet](#) gespeichert.

Beispiel Flow

Download: [simple_event-notary.flow.json](#)



Dem Event-Notar Node wird als `msg.payload` lediglich die Zahl "1337" übergeben. Diese wird als Bezug von 1337 Wattstunden (Wh) Strom angenommen. Der Node sendet in einem ersten Schritt diese Daten an den Zertifizierungsdienst. Optional kann in der Konfiguration des Nodes eine Postleitzahl (Postal Code) angegeben werden, um dem Zertifizierungsdienst einen Hinweis über den Ort des Strombezuges mitzugeben. In einem zweiten Schritt erhält der Node ein Intermediate (=vorläufiger [Beleg](#)); überprüft das Intermediate; unterschreibt es und sendet es zum Zertifizierungsdienst. Die Rückantwort des Zertifizierungsdienst wird auf der Ausgabe als `msg.payload` zurückgegeben.

Eine detaillierte Beschreibung der Belegerstellung kann der [TyDIDs Blockchain basierte Nachweisführung der THG-Emission und Minderung](#) entnommen werden. Der Node Event-Notary implementiert diesen Prozess.

Eingabe (`msg.payload`)

Node 'inject' bearbeiten

Löschen

Abbrechen

Fertig

⚙️ Eigenschaften



🔖 Name

1337 Wattstunden



msg. payload

=

▼ ⁰₉ 1337



Ausgabe

```
{
  "hash": {

    "signature": "0x85f7460870ca348caf60a94a766521c697b60b5c0a80da10a96b9fe6129903056b62aa5b940788523357974a3adc5e50abf2b690d03c12fe26a517dd7924c3681c",
    "payload": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
  },
  "owner": {

    "signature": "0xd73098704a6c8dfed4e6c2977f4b70f2591314fcee1ecbc733466a06788e8e84050a5f03c9fbe11be5b655219d5fcaa0692aead9e6e6d2d4bbb492c302b0e25a1b",
    "payload": {
      "owner": "0x48a2F735c6BC140C15109f5a8AFF8010715D9ddb",
      "issuer": "0xE7Fe0626D7B8e3F2e5ECD146F9b11daac1DBE447",
      "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
    }
  },
  "context": {

    "signature": "0xafdb01935aae5a2da5af49db2f723c1649dc8ce92913cc8521a5b587df9e8ba24a9cdd3f54514b1868b15580d0ed21d9530cca623c532c874d4addfdd5934be51c",
    "payload": ""
  },
}
```

```
"did": {

"signature": "0xa9becd0fc1c99a0b03360f60705c831bc305c1487687aff9925116be71072f386e0c9e89855e133
6534081b6d5e74d6970d4a70836737968944ba9d2dea43dae1c",

  "payload": {

"url": "did: ethr: 6226: 0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1: 0xf21548440474afb51053CEEb3101
1d9E4a168D2D",

    "registry": "0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1",
    "uid": "0xf21548440474afb51053CEEb31011d9E4a168D2D",
    "schema": "did",
    "method": "ethr: 6226",
    "ghgtoken": {
      "address": "0x36AbF05ac533D9Bb2024A2fb00c9e3F52e4F6a50",
      "certificates": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
      "savings": "0xc475EcB54601C676Ad008A7857A385a52c445244",
      "emissions": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB"
    },
    "nft": {

"signature": "0x92923d135c6e4bc15bf8d20cd985f990f98fae8ac5ee3b3fc13785c75667b48239c5f888e9fa9cc
8f30d775c2f2da97da36d725a77ed81eabdf919657d6bdfbb1c",

      "payload": {
        "address": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
        "tx": {
          "nonce": 2199,
          "gasPrice": {
            "type": "BigNumber",
            "hex": "0x03e8"
          },
          "gasLimit": {
            "type": "BigNumber",
            "hex": "0x039a6c"
          },
          "to": "0x36AbF05ac533D9Bb2024A2fb00c9e3F52e4F6a50",
          "value": {
            "type": "BigNumber",
            "hex": "0x00"
          },
        },
      },
    },
  },
}
```

[illegible]

```
"transactionHash": "0xb48af4752575241931521fabce913ee2f38814b79037af3bbf2ce6bd4e658736",
    "address": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
    "topics": [

"0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",

"0x0000000000000000000000000000000000000000000000000000000000000000",

"0x0000000000000000000000000000000000000000000000000000000000000000",

"0x00000000000000000000000000000000000000000000000000000000000000457"

    ],
    "data": "0x",
    "logIndex": 0,

"blockHash": "0x3ddbcb4fe87e13e1b9556aaf92afee7f45b6fa36ab30c5c33b0b7098ba8558"
    },
    {
        "transactionIndex": 0,
        "blockNumber": 648343,

"transactionHash": "0xb48af4752575241931521fabce913ee2f38814b79037af3bbf2ce6bd4e658736",
    "address": "0xc475EcB54601C676Ad008A7857A385a52c445244",
    "topics": [

"0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",

"0x0000000000000000000000000000000000000000000000000000000000000000",

"0x00000000000000000000000000000000000000000000000000000000000000f21548440474afb51053ceeb31011d9e4a168d2d"

    ],

"data": "0x0000000000000000000000000000000000000000000000000000000000000013a",
    "logIndex": 1,

"blockHash": "0x3ddbcb4fe87e13e1b9556aaf92afee7f45b6fa36ab30c5c33b0b7098ba8558"

    },
    {
        "transactionIndex": 0,
```

```
"blockNumber": 648343,
```

```
{  
  "transactionHash": "0xb48af4752575241931521fabce913ee2f38814b79037af3bbf2ce6bd4e658736",  
    "address": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB",  
    "topics": [  
  
      "0xdddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",  
  
      "0x0000000000000000000000000000000000000000000000000000000000000000",  
  
      "0x0000000000000000000000000000000000000000000000000000000000000000"  
        ],  
  
  "data": "0x000000000000000000000000000000000000000000000000000000000000000010d",  
    "logIndex": 2,  
  
  "blockHash": "0x33ddbecb4fe87e13e1b9556aaf92afee7f45b6fa36ab30c5c33b0b7098ba8558"  
    }  
  },  
  "blockNumber": 648343,  
  "confirmations": 1,  
  "cumulativeGasUsed": {  
    "type": "BigNumber",  
    "hex": "0x038340"  
  },  
  "effectiveGasPrice": {  
    "type": "BigNumber",  
    "hex": "0x03e8"  
  },  
  "status": 1,  
  "type": 0,  
  "byzantium": true  
},  
  "tokenId": "0x00000000000000000000000000000000000000000000000000000000000000457"  
}  
},  
  "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"  
}  
},  
  "metering": {
```

```
"signature": "0xff554124da0b612bf4826f9fff3472b5e8636fb3f35cbdac20e2989b0fc6ba5012bcfb20f7e91b21c9135ce328aa45ffb189106197151621ceab90e8b77bb81b",
  "payload": {
    "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
  },
  "presentations": {
    "type": {

"signature": "0xa6c27697b4f526292c5728d12f28d3f41d4dd278a1e134193332b5b1f25a133b42c94d06911a81a250df0c3c11a5ed0454f6a9ede14807eb967b563ea2c1e94f1b",
    "payload": "electricity consumption from public grid",
    "$schema": "https://schema.corrently.io/tydids/type"
  },
  "context": {

"signature": "0xafdb01935aae5a2da5af49db2f723c1649dc8ce92913cc8521a5b587df9e8ba24a9cdd3f54514b1868b15580d0ed21d9530cca623c532c874d4addfdd5934be51c",
    "payload": "",
    "$schema": "https://schema.corrently.io/tydids/context"
  },
  "location": {

"signature": "0xdb8491a4dc3a9e2d90821f5de30781c744e568386ba0732a7fec6d2c75e6f308216c2c30b82b3a6301c06a1b7eb780c7447bf80152febef0ab361f6975428db11c",
    "payload": {
      "zip": "00000",
      "city": "Landesweit (national)",
      "country": "Germany",
      "meloid": "DETESTSD133713371337133713371337",
      "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
    },
    "$schema": "https://schema.corrently.io/tydids/location"
  },
  "metering": {

"signature": "0x5a886ea9e67e4dc0c06de165e11428c819b5aee5c1673569af094d58489494565576e78b3a2efd92e2415aafa17df54b6bdccdc4e16b57853c2381638ca55b211b",
    "payload": {
```

```
      "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
    },
    "$schema": "https://schema.corrently.io/tydids/metering"
  },
  "consumption": {

"signature": "0x6dbebcb5aaeeb93cb9684b975f034d051e88669d7ce429237b75f3ee3b1de06c5ed3a2d3eca375f8338eff5cb0e8d14f1dc24faf2cf787d04b65993286cb1c1b",

    "payload": {
      "unit": "wh",
      "actual": 1337,
      "time": 1673220421200,
      "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
    },
    "$schema": "https://schema.corrently.io/tydids/consumption"
  },
  "ghg": {

"signature": "0x7b7636b91814e44a859eeac0d2a891d5d007d5930ee01f416607ce5da39fd925248d2b24649ad22cc6a2d496023b1fc04e06198fa901fa200696fa7664333b911c",

    "payload": {
      "factors": {
        "unit": "g co2eq per wh",
        "actual": {
          "grid": 0.201,
          "eco": 0.201
        },
        "base": {
          "grid": 0.436
        }
      },
      "base": {
        "unit": "g co2eq",
        "grid": 583
      },
      "actual": {
        "unit": "g co2eq",
        "grid": 269,
        "eco": 269
      }
    },
  }
```



```

    "saving": {
      "unit": "g co2eq",
      "grid": 314
    },
    "scope": 2,
    "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
  },
  "$schema": "https://schema.corrently.io/tydids/ghg"
},
"did": {

"signature": "0x71a06d3cc23a2f7821d56ccce01d7ff3a7a30c73bf568cf9eb998f5dd4c55bb575e9321df08edf6
b13c4548a38d95f9e50c6ed075d87f87a8a8cbf8957d229191c",
  "payload": {

"url": "did: ethr: 6226: 0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1: 0xf21548440474afb51053CEEb3101
1d9E4a168D2D",
    "registry": "0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1",
    "uid": "0xf21548440474afb51053CEEb31011d9E4a168D2D",
    "schema": "did",
    "method": "ethr: 6226",
    "ghgtoken": {
      "address": "0x36AbF05ac533D9Bb2024A2fb00c9e3F52e4F6a50",
      "certificates": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
      "savings": "0xc475EcB54601C676Ad008A7857A385a52c445244",
      "emissions": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB"
    },
    "nft": {

"signature": "0x92923d135c6e4bc15bf8d20cd985f990f98fae8ac5ee3b3fc13785c75667b48239c5f888e9fa9cc
8f30d775c2f2da97da36d725a77ed81eabdf919657d6bdfbb1c",
    "payload": {
      "address": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
      "tx": {
        "nonce": 2199,
        "gasPrice": {
          "type": "BigNumber",
          "hex": "0x03e8"
        },
      },
      "gasLimit": {

```

[illegible]

```
"hash": "0xb48af4752575241931521fabce913ee2f38814b79037af3bbf2ce6bd4e658736",
```

```
"logsBloom": "0x0000000000008000000000000000000020000000000000000000000000000000  
0000000000000000002008000000000000100040000000000000000000000000800800000000000000  
0000000200000000080002400000200000000000000008000000000100000000000010000000000000000  
0000000000000000000000000000001000020000000000000000000000000000000000000000000000000"
```

[illegible]

[illegible]

```
        "type": 0,
        "byzantium": true
    },

    "tokenId": "0x00000000000000000000000000000000000000000000000000000000000000457"
    },
    {
        "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
    },
    {
        "$schema": "https://schema.corrently.io/tydids/did"
    },
    {
        "_all": {

            "signature": "0x8999c3c3c95f8d010691499f336243cc076af36385ed72af331099363bd6717438b845c8db6c9cbf5940490e884dbba8af602c9b46be86c12af4aee1d25e5a1e1b",

            "payload": {
                "type": "electricity consumption from public grid",
                "context": "",
                "location": {
                    "zip": "00000",
                    "city": "Landesweit (national)",
                    "country": "Germany",
                    "meloid": "DETESTSD133713371337133713371337",
                    "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
                },
                "metering": {
                    "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
                },
                "consumption": {
                    "unit": "wh",
                    "actual": 1337,
                    "time": 1673220421200,
                    "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
                },
                "ghg": {
                    "factors": {
                        "unit": "g co2eq per wh",
                        "actual": {
                            "grid": 0.201,
                            "eco": 0.201
                        }
                    }
                }
            }
        }
    }
}
```

```

    },
    "base": {
      "grid": 0.436
    }
  },
  "base": {
    "unit": "g co2eq",
    "grid": 583
  },
  "actual": {
    "unit": "g co2eq",
    "grid": 269,
    "eco": 269
  },
  "saving": {
    "unit": "g co2eq",
    "grid": 314
  },
  "scope": 2,
  "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
},
"_iat": 1673220421256,
"_iss": "0xE7Fe0626D7B8e3F2e5ECD146F9b11daac1DBE447",
"_jti": "0xf21548440474afb51053CEEb31011d9E4a168D2D",
"did": {

```

```

"url": "did: ethr: 6226: 0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1: 0xf21548440474afb51053CEEb31011d9E4a168D2D",

```

```

  "registry": "0x3bFCf4Fe3b7D2E2fd079b5Dd546Aa30300D8fBE1",
  "uid": "0xf21548440474afb51053CEEb31011d9E4a168D2D",
  "schema": "did",
  "method": "ethr: 6226",
  "ghgtoken": {
    "address": "0x36AbF05ac533D9Bb2024A2fb00c9e3F52e4F6a50",
    "certificates": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",
    "savings": "0xc475EcB54601C676Ad008A7857A385a52c445244",
    "emissions": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB"
  },
  "nft": {

```

[illegible]

```
"to": "0x36AbF05ac533D9Bb2024A2fb00c9e3F52e4F6a50",  
    "from": "0xE7Fe0626D7B8e3F2e5ECD146F9b11daac1DBE447",  
    "contractAddress": null,  
    "transactionIndex": 0,  
    "gasUsed": {  
      "type": "BigNumber",  
      "hex": "0x038340"  
    },  
  
    "logsBloom": "0x00000000000008000000000000000000000200000000000000000000000000000000  
00000000000000000000000000000000000000000000000000000000000000000000000000000000  
00000000200000000000000000000000000000000000000000000000000000000000000000000000  
00000000200000000000000000000000000000000000000000000000000000000000000000000000  
00000000000000000000000000000000000000000000000000000000000000000000000000000000  
0000000000000000000000000000000000000000000000000000000000000000000000000000000  
000000000000000000000000000000000000000000000000000000000000000000000000000000",  
  
    "blockHash": "0x33ddbecb4fe87e13e1b9556aaf92afee7f45b6fa36ab30c5c33b0b7098ba8558",  
  
    "transactionHash": "0xb48af4752575241931521fabce913ee2f38814b79037af3bbf2ce6bd4e658736",  
    "logs": [  
      {  
        "transactionIndex": 0,  
        "blockNumber": 648343,  
  
        "transactionHash": "0xb48af4752575241931521fabce913ee2f38814b79037af3bbf2ce6bd4e658736",  
        "address": "0x65297AFaf11eeAd5258A46e969c2341708e9CC59",  
        "topics": [  
  
          "0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",  
  
          "0x0000000000000000000000000000000000000000000000000000000000000000",  
  
          "0x0000000000000000000000000000000000000000000000000000000000000000",  
  
          "0x00000000000000000000000000000000000000000000000000000000000000457"  
        ],  
        "data": "0x",  
        "logIndex": 0,  
  
        "blockHash": "0x33ddbecb4fe87e13e1b9556aaf92afee7f45b6fa36ab30c5c33b0b7098ba8558"
```



```
    },
    {
      "transactionIndex": 0,
      "blockNumber": 648343,

      "transactionHash": "0xb48af4752575241931521fabce913ee2f38814b79037af3bbf2ce6bd4e658736",
      "address": "0xc475EcB54601C676Ad008A7857A385a52c445244",
      "topics": [

        "0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",

        "0x0000000000000000000000000000000000000000000000000000000000000000",

        "0x000000000000000000000000f21548440474afb51053ceeb31011d9e4a168d2d"
      ],

      "data": "0x0000000000000000000000000000000000000000000000000000000000000013a",
      "logIndex": 1,

      "blockHash": "0x33ddbecb4fe87e13e1b9556aaf92afee7f45b6fa36ab30c5c33b0b7098ba8558"
    },
    {
      "transactionIndex": 0,
      "blockNumber": 648343,

      "transactionHash": "0xb48af4752575241931521fabce913ee2f38814b79037af3bbf2ce6bd4e658736",
      "address": "0xd37B668Ad0417EcD22472ca555a431e84afB40BB",
      "topics": [

        "0xddf252ad1be2c89b69c2b068fc378daa952ba7f163c4a11628f55a4df523b3ef",

        "0x0000000000000000000000000000000000000000000000000000000000000000",

        "0x000000000000000000000000f21548440474afb51053ceeb31011d9e4a168d2d"
      ],

      "data": "0x00000000000000000000000000000000000000000000000000000000000010d",
      "logIndex": 2,

      "blockHash": "0x33ddbecb4fe87e13e1b9556aaf92afee7f45b6fa36ab30c5c33b0b7098ba8558"
```

```

        }
      ],
      "blockNumber": 648343,
      "confirmations": 1,
      "cumulativeGasUsed": {
        "type": "BigNumber",
        "hex": "0x038340"
      },
      "effectiveGasPrice": {
        "type": "BigNumber",
        "hex": "0x03e8"
      },
      "status": 1,
      "type": 0,
      "byzantium": true
    },
    "tokenId": "0x00000000000000000000000000000000000000000000000000000000000000457"
  }
},
{
  "hash": "0xd90d0978039c34f955e0813af6c3f853ab43a891e508a3517a1c7c3929531be6"
}
},
"$schema": "https://schema.corrently.io/tydids/_all"
}
}
}

```

Quellcode der Implementierung

Revision #3

Created 8 January 2023 22:55:52 by Thorsten Zoerner

Updated 17 February 2023 10:02:44 by Thorsten Zoerner