Airbrush

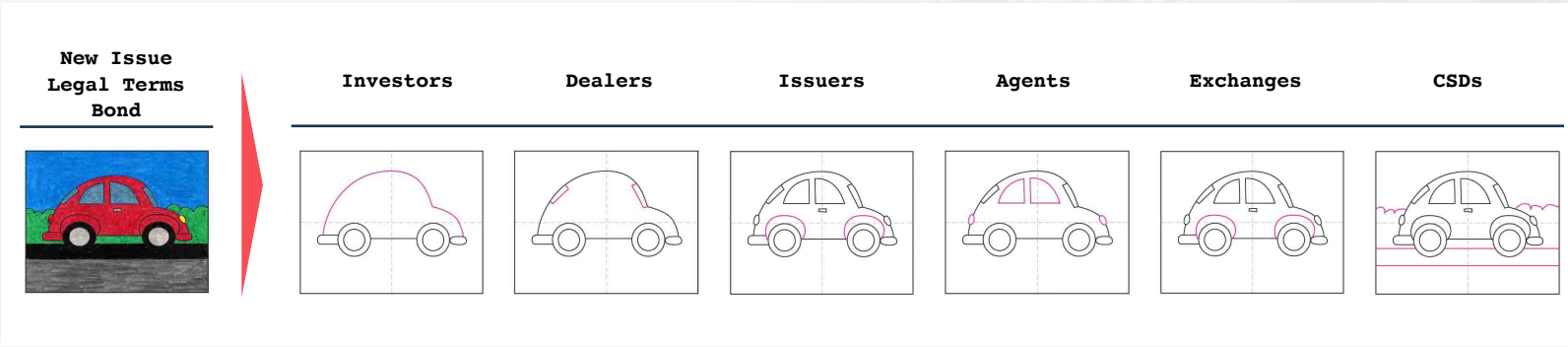
A common specification for the creation and definition of new fixed income securities

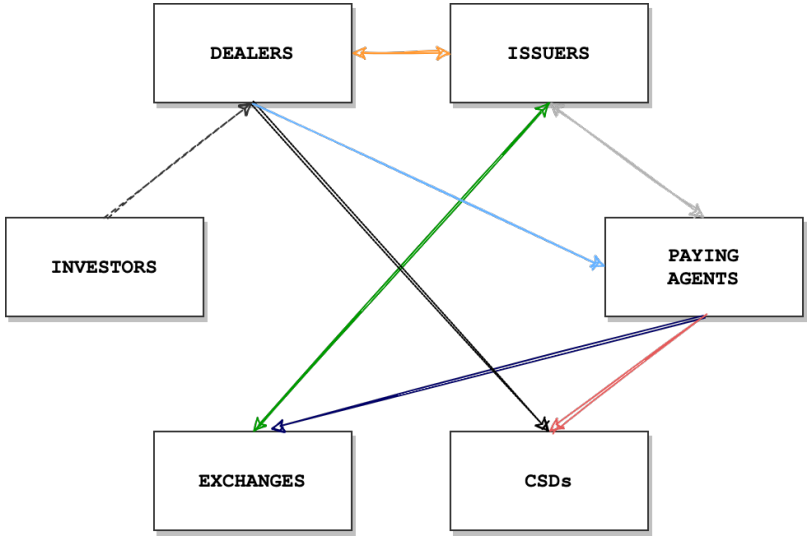
21 JUNE 2021

The Data Problem

The same security “exists” in multiple systems, **defined in different ways**

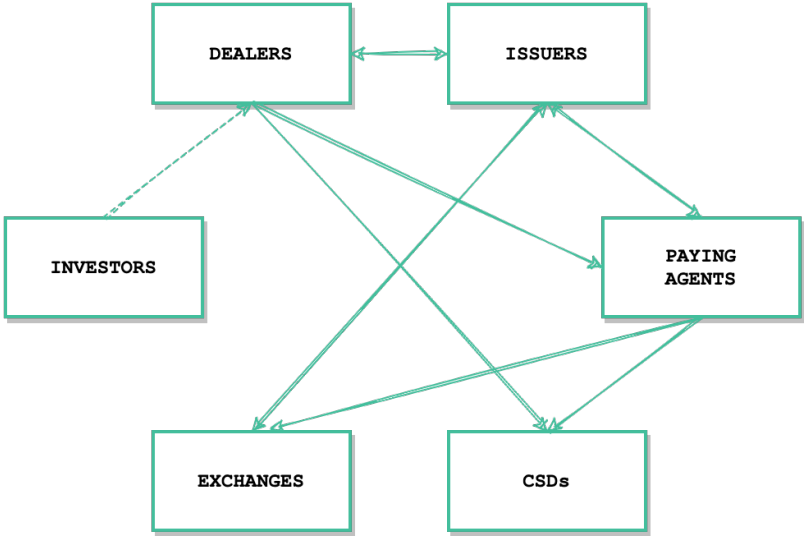
When a new bond is created, each institution creates a representation of that bond in their systems. But the way they define it can differ from system to system.





“Straight-through-processing” is difficult to achieve with bespoke integrations between different counterparties

Each integration requires a bespoke mapping from **System A** to **System B**



Requiring the entire ecosystem to re-architect their systems to a new standard will take years to implement

The **“holy grail”** solution may be a common database standard that everyone adheres to, or even a “ledger” that everyone “shares”.

But re-architecting the internal systems of every market participant will take years, (maybe decades), before there will be any tangible benefit.

Airbrush is an interface data standard for defining a new fixed income security

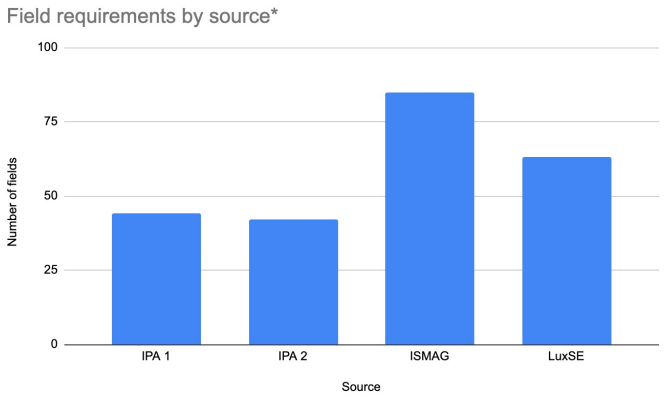
It determines the **minimum set of data** requirements to process a new issuance and proposes a **standard naming convention** for all parameters.

Using the Airbrush standard replaces the need for multiple bilateral interfaces between market participants. Internal systems and databases do not need to be re-architected, and technology providers can use their own markup languages.

Airbrush ensures that when communicating with one another, systems will send and receive the necessary set of parameters in a consistent format.

Two major challenges to a standard definition of a bond

1 How many fields do you need to define the bond?



2 What should you call each field and list of acceptable values?

IPA 1	IPA 2	LuxSE	Clearstream	Airbrush
CCY	Currency	specified Currency	Nominal Currency	currency_notional (mandatory)
Income CCY (if different)	Coupon Currency		Payment Currency	currency_payment (conditional)
Maturity CCY			Redemption Payment Currency	
Settlement CCY				currency_settlement (conditional)

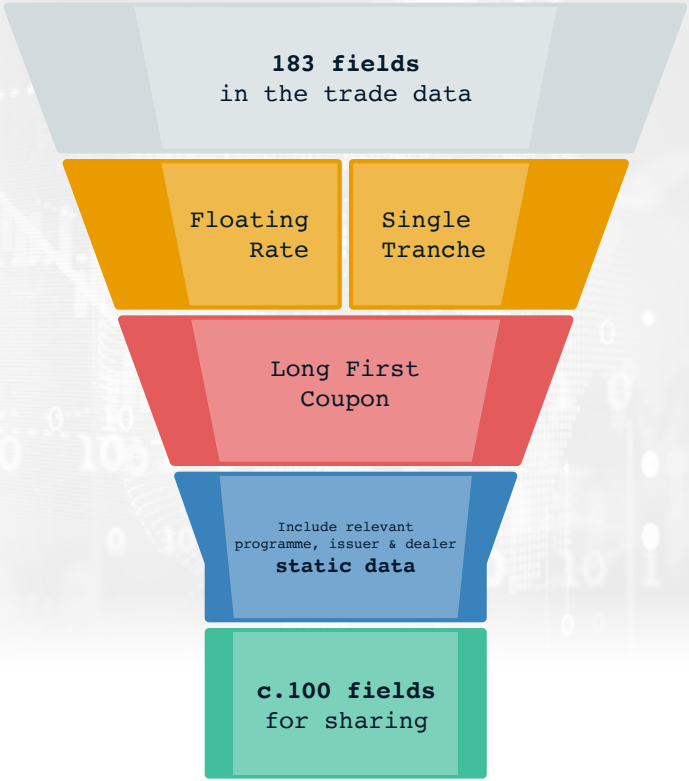
Airbrush solves both problems. For each type of security, we specify the necessary and sufficient parameters to define it and propose a naming convention for fields and values.

**Note: data has been adjusted to enable like-for-like scope comparison between sources*

Airbrush filters transaction data to ensure we agree on what is a necessary and sufficient data set for each trade

A recent test trade on the Origin platform generated 183 fields representing the trade. Data needs to be cleaned before it can be shared, and then augmented with certain programme/issuer/dealer static data – Airbrush is the standard we will use to do this.

It is modular, so we can select the fields which need to be shared based on the attributes of the trade.



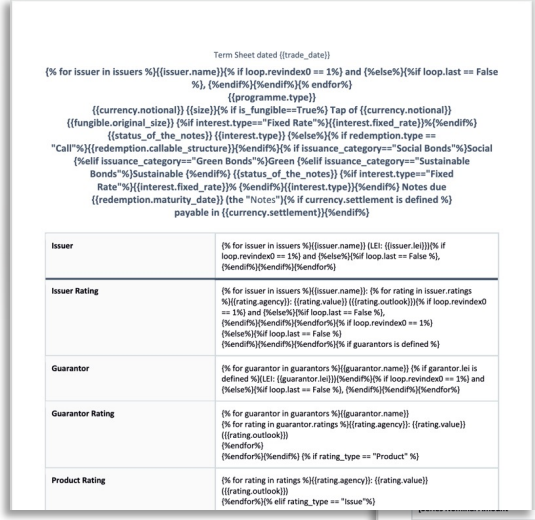
Two pillars to Airbrush

1. Data Specification

Airbrush defines the ‘storage’ layer specification for the issuance of a fixed income security,
in a format which can be readily converted into an API specification.

2. Standardised Termsheet

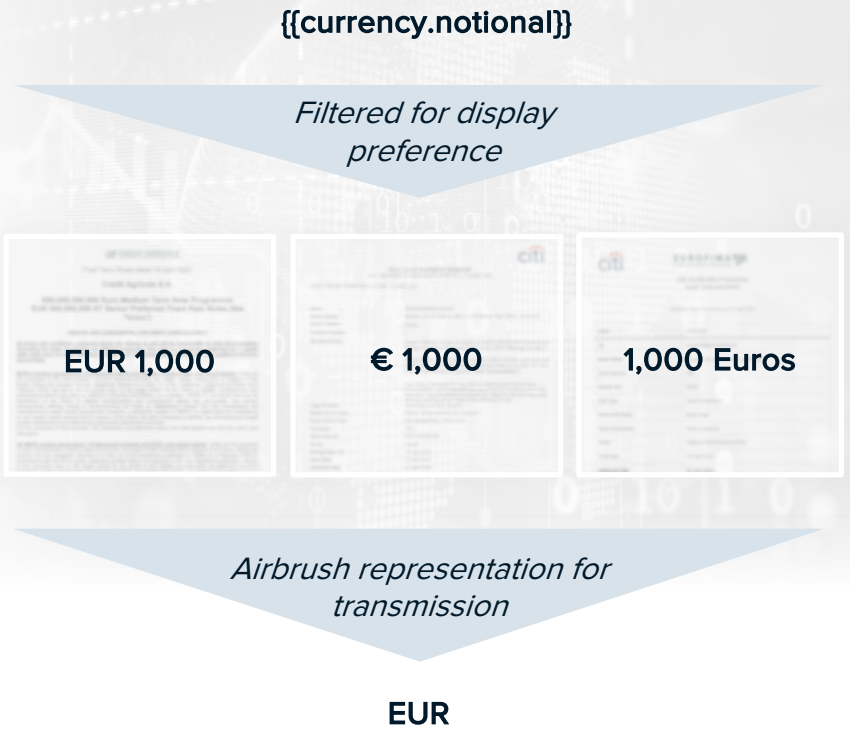
The source of this data is the legal documentation produced as part of each issuance. Now, as part of Airbrush, we introduce a ‘Form of Termsheet’ template and a ‘Machine Readable’ termsheet template which shows how the document digitization process works and is linked to the Airbrush data representation of the bond.



Separating the ‘storage’ and ‘display’ layers

The machine-readable termsheet is designed with data storage and transmission in mind. The guiding principle of the termsheet (and Airbrush) is to standardise the mutually exclusive and collectively exhaustive minimum set of data required to define, document and process the issue.

The **display** of data is defined by the involved parties’ preferences. For example, ‘EUR’, ‘€’ or ‘Euros’ are all properties of **{{currency.notional}}** rather than being defined as separate data. On Origin’s platform, these display preferences are handled through the code and extensions to Jinja, meaning that the dictionary of common fields can be standardized for storage and processing while the display of the data in the documentation is flexible.



Standardised Termsheet template

The Airbrush Standardised Termsheet has been refined based on over 100 live and test trades conducted with over 30 issuers since the start of 2020.

It currently supports:

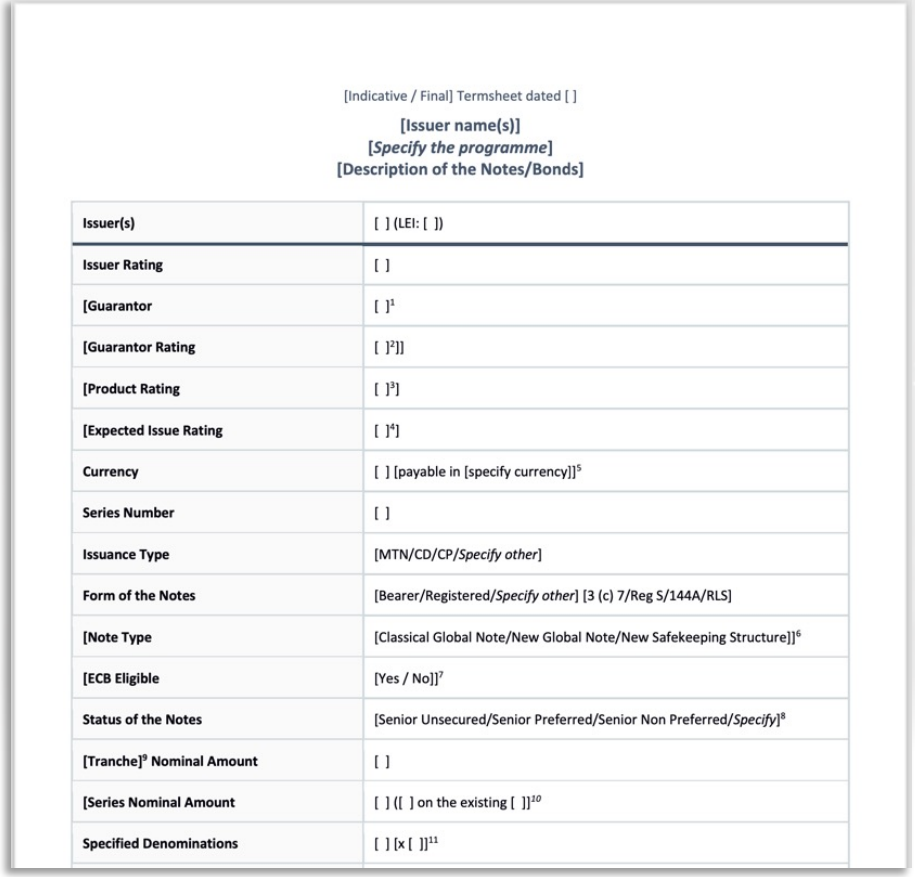
Seniority: Senior Preferred and Senior Unsecured

Coupon type: fixed, floating and zero coupon

Distribution: Private placement and benchmark /syndicated

Format: MTN issuance under a programme

We would welcome any feedback on the structure and content of the Standardised Termsheet.



[Indicative / Final] Termsheet dated [ ]

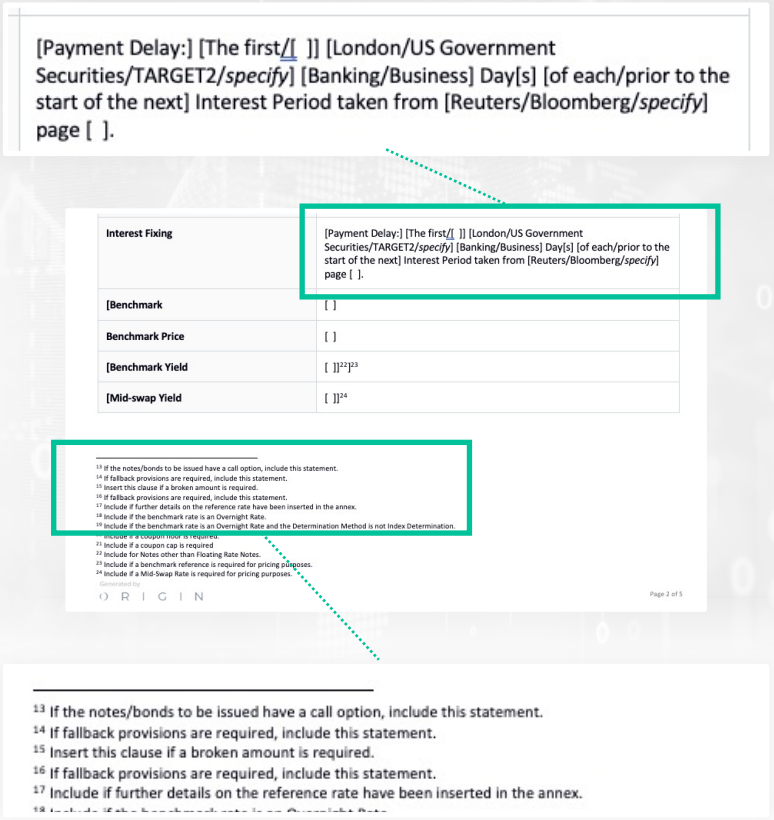
[Issuer name(s)]
[*Specify the programme*]
[Description of the Notes/Bonds]

Issuer(s)	[ ] (LEI: [ ])
Issuer Rating	[ ]
[Guarantor	[ ][1]
[Guarantor Rating	[ ][2]]
[Product Rating	[ ][3]]
[Expected Issue Rating	[ ][4]]
Currency	[ ] [payable in [specify currency]][5]
Series Number	[ ]
Issuance Type	[MTN/CD/CP/*Specify other*]
Form of the Notes	[Bearer/Registered/*Specify other*] [3 (c) 7/Reg S/144A/RLS]
[Note Type	[Classical Global Note/New Global Note/New Safekeeping Structure]][6]
[ECB Eligible	[Yes / No]][7]
Status of the Notes	[Senior Unsecured/Senior Preferred/Senior Non Preferred/*Specify*][8]
[Tranche][9] Nominal Amount	[ ]
[Series Nominal Amount	[ ] ([ ] on the existing [ ]][10]
Specified Denominations	[ ] [x [ ]][11]

Standardised Termsheet template

The Standardised Termsheet provides the logic for completing the template in the manner of a ‘Form of Final Terms’ template, using square brackets and footnotes to provide direction to the user.

The options for each field are provided where appropriate and practicable and correspond to the options for those fields in Airbrush.

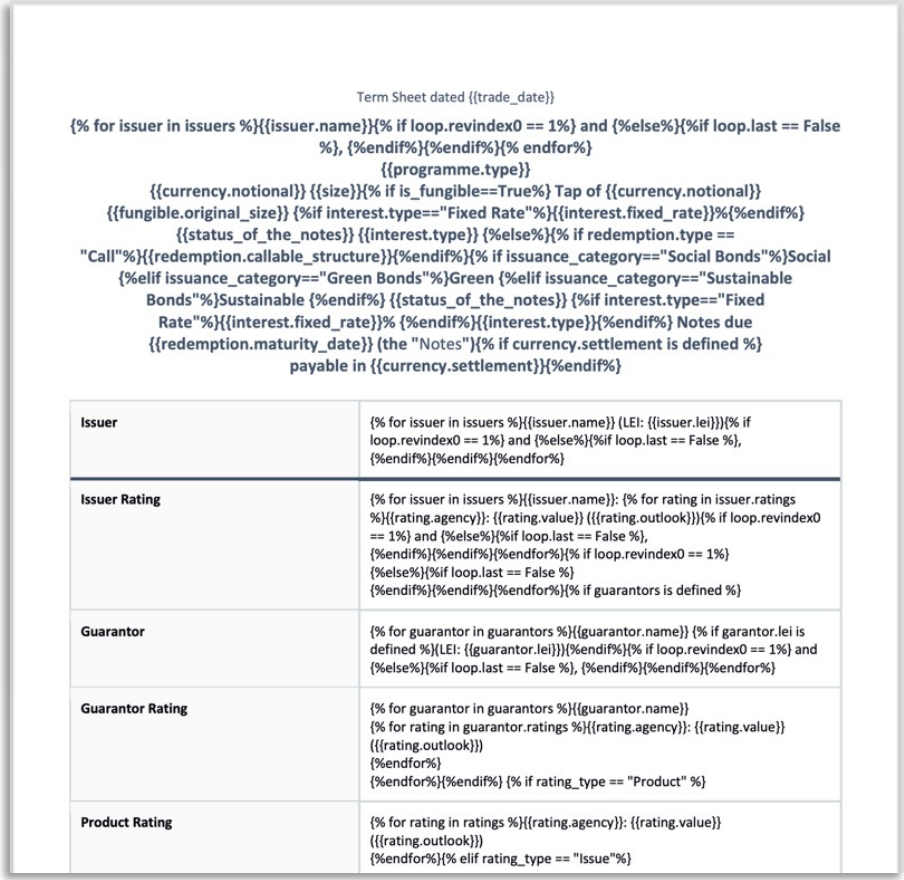


Machine-Readable Termsheet

The Machine-Readable Termsheet transforms the logic in the Standardised Termsheet into code.

While the **data specification** is Airbrush, the **language** used in the template is Jinja – an open-source templating language based on Python. Many of these templating languages already exist and we selected an open-source and well-established language to allow maximum market utility.

Any interested user can download a Jinja ‘parser’ (the engine which reads the data and inserts it throughout the template) and use this Machine-Readable Termsheet ‘out of the box’.



Term Sheet dated {{trade_date}}

{% for issuer in issuers %}{{issuer.name}}{% if loop.revindex0 == 1%} and {%else%}{%if loop.last == False %}, {%endif%}{%endif%}{% endfor%}
{{programme.type}}
{{currency.notional}} {{size}}{% if is_fungible==True%} Tap of {{currency.notional}} {{fungible.original_size}} {%if interest.type=="Fixed Rate"%}{{interest.fixed_rate}}%{%endif%} {{status_of_the_notes}} {{interest.type}} {%else%}{% if redemption.type == "Call"%}{{redemption.callable_structure}}{%endif%}{% if issuance_category=="Social Bonds"%}Social {%elif issuance_category=="Green Bonds"%}Green {%elif issuance_category=="Sustainable Bonds"%}Sustainable {%endif%} {{status_of_the_notes}} {%if interest.type=="Fixed Rate"%}{{interest.fixed_rate}}% {%endif%}{{interest.type}}{%endif%} Notes due {{redemption.maturity_date}} (the "Notes"){% if currency.settlement is defined %} payable in {{currency.settlement}}{%endif%}

Issuer	{% for issuer in issuers %}{{issuer.name}} (LEI: {{issuer.lei}}){% if loop.revindex0 == 1%} and {%else%}{%if loop.last == False %}, {%endif%}{%endif%}{%endfor%}
Issuer Rating	{% for issuer in issuers %}{{issuer.name}}: {% for rating in issuer.ratings %}{{rating.agency}}: {{rating.value}} ({{rating.outlook}}){% if loop.revindex0 == 1%} and {%else%}{%if loop.last == False %}, {%endif%}{%endif%}{%endfor%}{% if loop.revindex0 == 1%} {%else%}{%if loop.last == False %} {%endif%}{%endif%}{%endfor%}{% if guarantors is defined %}
Guarantor	{% for guarantor in guarantors %}{{guarantor.name}} {% if garantor.lei is defined %}(LEI: {{guarantor.lei}}){%endif%}{% if loop.revindex0 == 1%} and {%else%}{%if loop.last == False %}, {%endif%}{%endif%}{%endfor%}
Guarantor Rating	{% for guarantor in guarantors %}{{guarantor.name}} {% for rating in guarantor.ratings %}{{rating.agency}}: {{rating.value}} ({{rating.outlook}}) {%endfor%} {%endfor%}{%endif%} {% if rating_type == "Product" %}
Product Rating	{% for rating in ratings %}{{rating.agency}}: {{rating.value}} ({{rating.outlook}}) {%endfor%}{% elif rating_type == "Issue"%}

Machine-Readable Termsheet template

In the Airbush GitHub repository you will find:

- The Machine Readable termsheet
- An example JSON file of structured data in the Airbrush format
- Instructions on how to download and install an open source basic ‘parser’ which enables you to use the Machine Readable Termsheet to turn JSON files into Termsheets

Interested users can download this information from the GitHub repository and use it to see how Airbrush can be used for the production of legal documentation.

Airbrush was constructed by aligning requirements of multiple market participants

Origin developed **Airbrush** by mapping our transaction and programme data to align with the requirements of Clearstream, LuxSE, the ISO standards and major paying agents

Airbrush v2.0 – Q3 Plan

During Q3 we aim to expand the specification to incorporate:

- New structures, including Notes with a change of interest basis
- More complex callable structures

We would welcome feedback on any specific areas which market participants would like to see incorporated in the next iteration.

airbrush@originmarkets.com

Where do I find out more?

The Airbrush data specification is published using the OpenAPI specification onto Origin's Github repository.

Get access at https://originmarkets.com/airbrush

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