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# Attribution Reporting API

Extensions & new features

TPAC 2023

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[bit.ly/ara-meeting-notes](https://bit.ly/ara-meeting-notes)

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# Agenda

- Recent changes
- Proposals and extensions
- Smaller feedback items
- Open discussion

# Recent changes

## “Lite” Flex event configurations (PR 856)

- ✓ Configure total # of reports
- ✓ Configure event report windows

Shipping in Chromium M117

Currently: we *reject* sources whose information gain exceeds 6.5 bits for views and 11.5 for clicks.

**Feedback requested: should we instead scale the noise up (potential footgun)?**

```
{
  "source_event_id": "12340873456",
  "destination": "https://foo.example/",
  "event_report_windows": {
    end_times: [
      3600,      // 1 hour
      86400,     // 1 day
      2592000,   // 30 days
    ],
  },
  "max_event_level_reports": 3
}
```

Source registration

## Lookback filters (PR 914)

- When `expiry` isn't enough...
- `_lookback_window` added as a reserved piece of `filter_data` on every source.

```
{  
  "event_trigger_data": [...],  
  "filters": {  
    "some_other_filter": ["foo"],  
    // Ignore the source if it was  
    // registered >7 days ago.  
    "_lookback_window": 604800  
  }  
}
```

Trigger registration

# Proposals and extensions

# Fully flexible event-level configurations (explainer)

- ✓ Return on ad spend via bucketing
- ✓ Larger counts via bucketing
- ✓ Custom event report windows
- ✓ All of the above configurable per conversion type / **trigger\_data**

Now integrated  
into our [SimLib](#)!

```
{  
  ...  
  "trigger_specs": [{  
    "trigger_data": [0,1], // types  
    "event_report_windows": {  
      "end_times": [3600, 86400, 2592000]  
    },  
    "summary_window_operator": value_sum,  
    "summary_buckets": [1, 10, 100, 1000]  
  }, ...],  
}
```

Source registration

```
{  
  ...  
  "source_event_id": "...",  
  "trigger_summary_bucket": [1,9],  
}
```

Event-level report

# Aggregatable reports with 0 delay (issue 974)

- ✓ Send aggregatable reports immediately
- ✓ Append an event ID to aggregatable reports
- x Many more null reports: must send aggregatable report unconditionally on trigger registration

```
{  
  ...  
  "aggregatable_trigger_data": [...]  
  "trigger_event_id": 12345678,  
}
```

Trigger registration

```
{  
  ...  
  "aggregation_service_payloads": [...]  
  "trigger_event_id": 12345678,  
}
```

Aggregatable report



# Custom shared ID labels & requerying

- ARA [issue 732](#) and PAA [issue 92](#)
- Allow tagging aggregatable reports with a *custom label* allowing for more flexible batching to satisfy the “no duplicates rule”
- Compose well with 0-delay mode
- Consider generalizing no duplicates → bounded duplicates

- API version
- reporting origin
- destination site
- scheduled report time
- source registration time\*
- **Custom label\***

Shared ID: how “duplicate” queries are distinguished  
\*: non-default

# Aggregate debugging (issue 705)

- Replacement for verbose debug reports
- Automatically embed the error code as another key piece
  - Reserves the least sig 12 bits
- Allows for creating histograms of errors

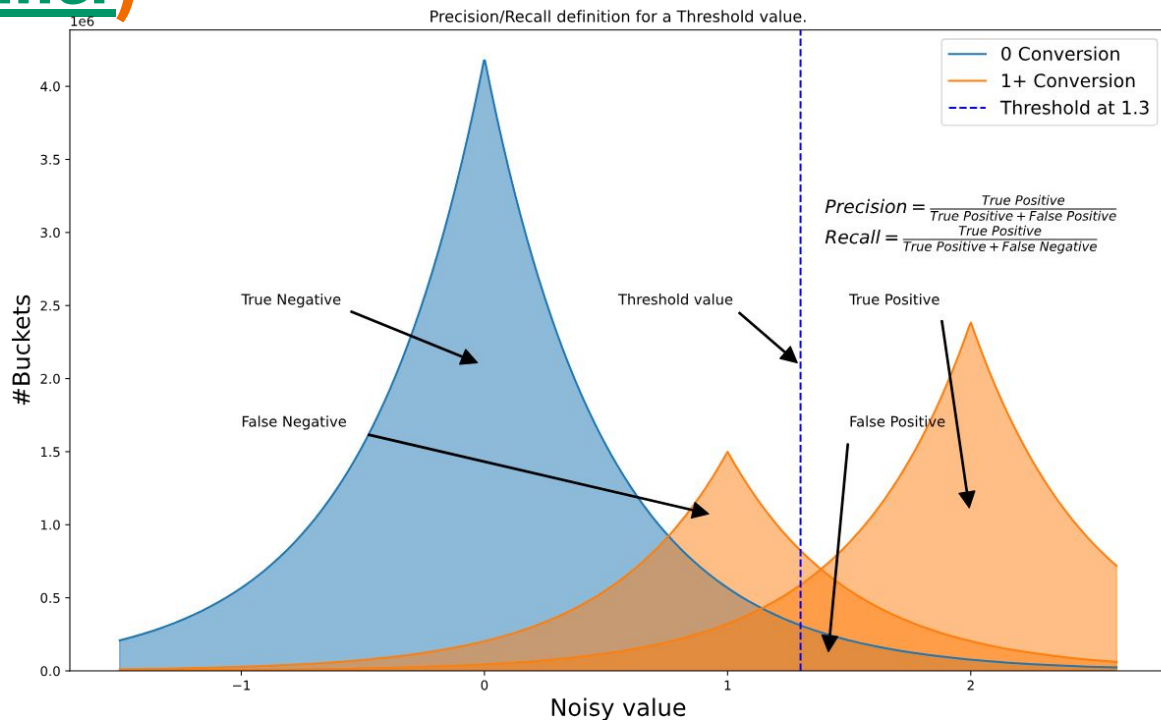
```
{  
  ...  
  // 128-bit key piece which will be OR'd with the  
  // debug report generated by the browser.  
  "debug_key_piece": "0xFFF1",  
  "debug_value": 128,  
}
```

Source or trigger registration

Error	Error key piece (hex)
source-destination-limit	0x0
source-noised	0x1
...	...

# Key discovery (explainer)

- Optional threshold
  - Truncated Laplace
  - $\epsilon$ -DP to  $(\epsilon, \delta)$ -DP
- 
- ✓ Learn positive keys without enumerating them all
  - ✓ Tune false positive / negatives



# Smaller feedback items

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- Destination limit ([currently: 3](#))
  - Reports leak cross-site data about “1 of k” sites
  - Increasing k not necessarily privacy neutral
- Filters on aggregatable values ([issue 649](#))
  - `aggregatable_trigger_data` is filterable right now
  - `aggregatable_values` is not
  - Is that a problem? i.e.
    - `|aggregatable_values| > 20` (current limit)
    - Source keys filtered out in `aggregatable_trigger_data`