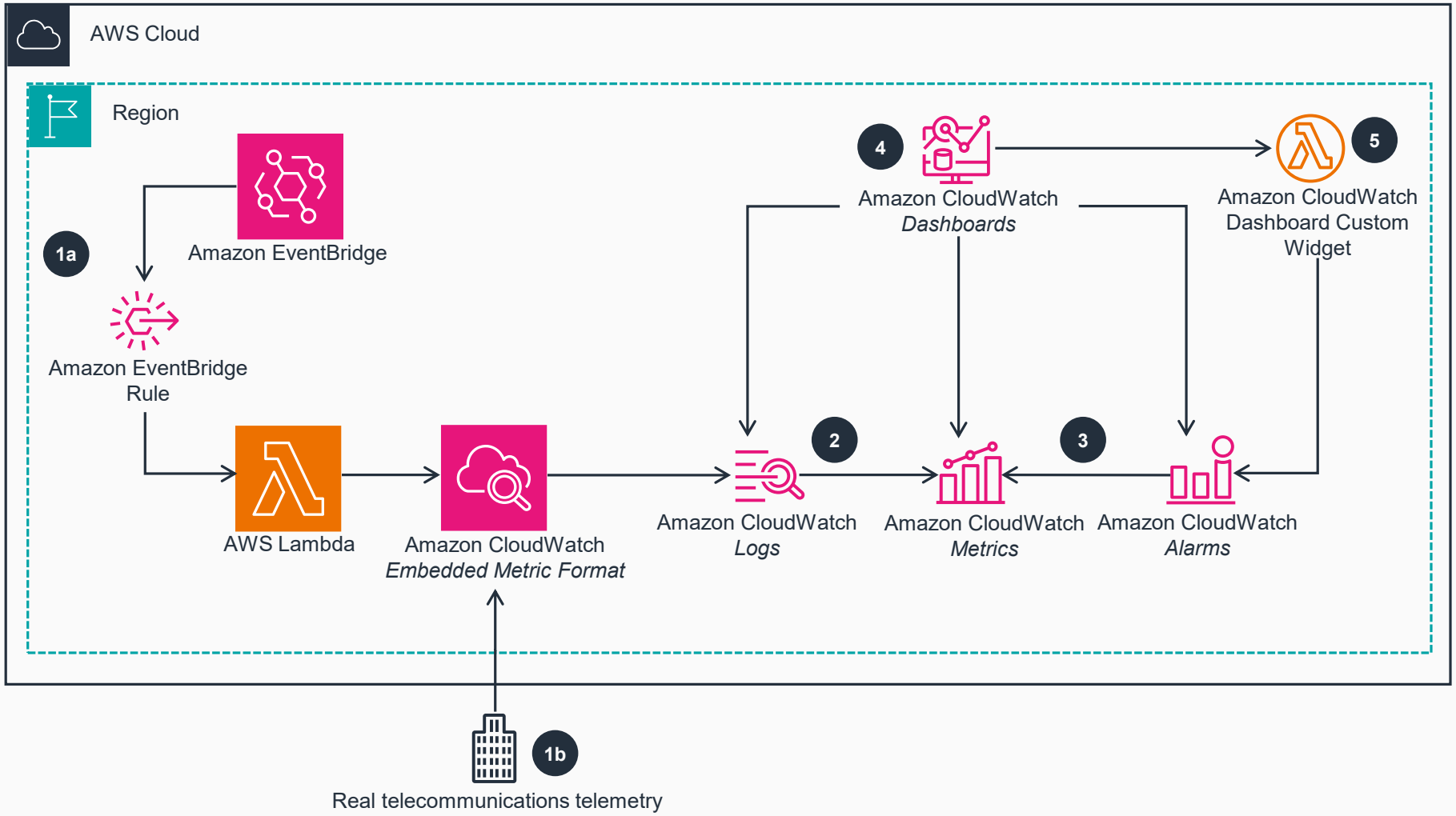
Guidance for Monitoring High-Cardinality Telecom Metrics on AWS

This architecture diagram shows you how to monitor high-cardinality telecom key performance indicators (KPIs) with Amazon CloudWatch.



1a An **Amazon EventBridge** rule invokes an **AWS Lambda** function every minute that generates simulated telecommunications telemetry using the **Amazon CloudWatch** embedded metric format.

1b Real telecommunications telemetry is sent to **CloudWatch** using the **CloudWatch** embedded metric format through the CloudWatch agent or PutLogEvents API. For an example of how our customers use this, refer to How BT uses Amazon CloudWatch to monitor millions of devices.

2 **CloudWatch** recognizes the embedded metric format in incoming log events, then extracts and generates aggregated metrics asynchronously.

3 The **CloudWatch** alarms are configured for each KPI with anomaly detection. Composite alarms are also created for each geographic boundary and combined individual KPI alarms.

4 One **CloudWatch** dashboard is created for each geographic level. That is, USA, Washington State, and Seattle would each have their own dashboard which shows the corresponding alarms, metrics, and logs for each level.

5 A geographic map is generated and displayed on the **CloudWatch** dashboards using custom widgets which color codes the map according to the alarm status. A custom widget is a **CloudWatch** dashboard widget that can call any **Lambda** function with custom parameters. It then displays the returned HTML or JSON file.

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AWS Reference Architecture