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1 Service Description

Our Data Analytics Framework (DAF) offers a comprehensive solution for businesses to harness the power of data and make data-driven decisions. Through advanced analytics and techniques, we help organisations uncover valuable insights, search unstructured data, identify trends, and drive meaningful outcomes.

1.1 Data Analytics Framework (DAF)

Hamiltonian Dynamics' DAF (Data Analytics Framework) is an automated metadata extraction, enrichment, search, visualisation, and reporting solution. By automating analysis and reporting tasks, DAF significantly reduces the manual effort required by users, saving valuable time and resources whilst increasing accuracy. DAF performs data ingestion, extraction, enrichment, and transformation for data types such as video, audio, and images and structured data like JSON and CSV. By applying OCR, object detection, NLP, NSFW filtering and semantic search techniques, it helps to identify key intelligence. DAF has a modular design that allows for flexible deployment options, and incorporates auditing, authentication, and authorisation for all actions performed, ensuring robust security and accountability throughout the workflow.

1.1.1 DAF Summary

DAF uses a modular design that runs processing chains for file types, extracting metadata and conducting analytics on the binaries enabling quick and easy access to data intelligence for end users. The modular design allows for seamless integration of bespoke processors, providing flexibility to tailor the system to specific requirements. Customers can introduce bespoke machine learning models, which can easily be incorporated into the processing chain to extract and analyse model data automatically. Additionally, commercially available off-the-shelf (COTS) models within the framework can be effortlessly executed and replaced, ensuring that the system remains up to date with the latest advancements. This adaptability ensures that DAF remains current and relevant, offering continued value and efficiency to users.

The architecture incorporates a robust feedback mechanism that enhances the data extraction capabilities of the system. For instance, if an image contains text, the text extracted will then undergo further processing through the text processing chain. This iterative approach ensures that data is continuously refined and optimised as it progresses through various stages of processing. By interconnecting the processing chains and feedback loops, the system can achieve higher levels of accuracy and efficiency in extracting insights and intelligence from the data.

DAF's design allows for both real-time analytics and bulk processing. It enables seamless integration with customer datasets in real-time, presenting the output to end users for immediate insights and informed decision-making.

DAF flexible architecture means its capable of processing and analysing any data format. Currently supported data formats include (not exhaustive):

- Image
- Audio
- Video
- Email
- Chat
- Mailbox
- OHIS
- Calendar
- Messaging applications

Examples of the models implemented include (not exhaustive):

- Image object detection
- Image captioning
- Image OCR
- Semantic image search
- Audio transcription in multiple languages
- Sentiment analysis, emotion detection and hate speech detection
- Text and Audio Summarisation
- Named Entity Recognition
- Language detection
- Natural Language Processing
- NSFW detection (not safe for work, nudity, profanity etc)
- Geolocation analysis
- Video frame analysis
- Meeting detection
- Facial recognition
- Semantic text search

DAF's flexible architecture allows for easy provisioning in various environments to meet customer requirements. Whether it is a local on-premises air-gapped setup or deployment in the Cloud, the design ensures seamless adaptation to different environments. DAF can be provided as a comprehensive suite of tools or tailored to specifically to focus on particular data types and capabilities based on the requirements of the customer. This scalability and customisation enable

the customer to tailor DAF to their specific requirements, ensuring optimal performance and functionality.

If you would like more information on how DAF can align with your specific requirements, please feel free to contact us. We would happily address any questions or discuss how we can cater to your unique needs.

1.1.2 Information Assurance

We prioritise information assurance in all our services, implementing rigorous security measures, data protection procedures, and compliance standards to ensure the confidentiality, integrity, and availability of your data. Our use of industry best practices, strong encryption methods, and ongoing monitoring helps mitigate risks and vulnerabilities, creating a secure and reliable environment for your applications.

Our commitment to information assurance is aimed at protecting your data and applications from potential security threats.

1.1.3 Data export or removal

We can export the data from the system for external reporting. Removal would be done in accordance with any customer requirements.

1.1.4 Training

We offer training for customers on all our services, ensuring they have the knowledge and expertise required to effectively use and manage the services to achieve their desired outcomes.

1.1.5 Pricing

Our competitive pricing for our Data Analytics Framework services is competitively structured to offer cost-effective solutions tailored to your specific project requirements. With transparent pricing models and flexible options, we provide competitive rates for designing, developing, and hosting applications that meet your business goals.

1.1.6 Service Level Agreement

We would collaborate with our customers to identify and establish a prioritised Service Level Agreement (SLA) framework tailored to their specific needs. This agreement would include tiers based on the impact of services in place, ensuring that critical functions receive the highest level of attention and support.

By defining an SLA using tiers based on impact, we aim to deliver timely and targeted services and incident responses that align with the client's operational priorities and requirements.

1.1.7 Service Management

Our services are backed by a robust service management framework that ensures seamless project delivery, efficient development processes, and reliable hosting solutions. We prioritise project monitoring, continuous improvement, and personalised customer support to guarantee the successful design, development, and hosting of your applications. Trust us to provide exceptional service excellence and operational efficiency throughout the project lifecycle, ensuring that your applications meet or exceed your expectations.

1.1.8 Service Constraints

We understand that services may encounter constraints, whether it is related to project timelines, resource availability, or stakeholder feedback. Additionally, technical limitations, platform

compatibility issues, compliance and security requirements, as well as budget constraints could influence the scope and delivery of services.

Our team is committed to proactively addressing and resolving these constraints to deliver high-quality applications that meet your business objectives while ensuring a seamless hosting experience.

1.2 Consultancy

Hamiltonian Dynamics can supply consultancy resource across the full SFIA grades advertised in our pricing model, in multiple engineering disciplines at all clearance level.

All our consultants are AWS certified and PSM1 certified as a minimum.

Hamiltonian Dynamics have vast experience working with Law Enforcement and other government departments using SCRUM and Agile methodologies, including data analytics, full stack development in most popular languages, automated testing, End to End testing, and User Acceptance Testing.

Hamiltonian Dynamics can consult or implement any system at scale from a small/large on-prem solution to cloud-based options or hybrid.

Hamiltonian Dynamics can inform on the best system design and architecture for your problem, including modern event-based architectures.

Hamiltonian Dynamics are COTS and Open-Source software specialists and can quickly identify the best solution using free tooling where it may be available.

1.3 Ordering and Invoicing

Ordering and Invoicing will be as per the T&C during the customer engagement.