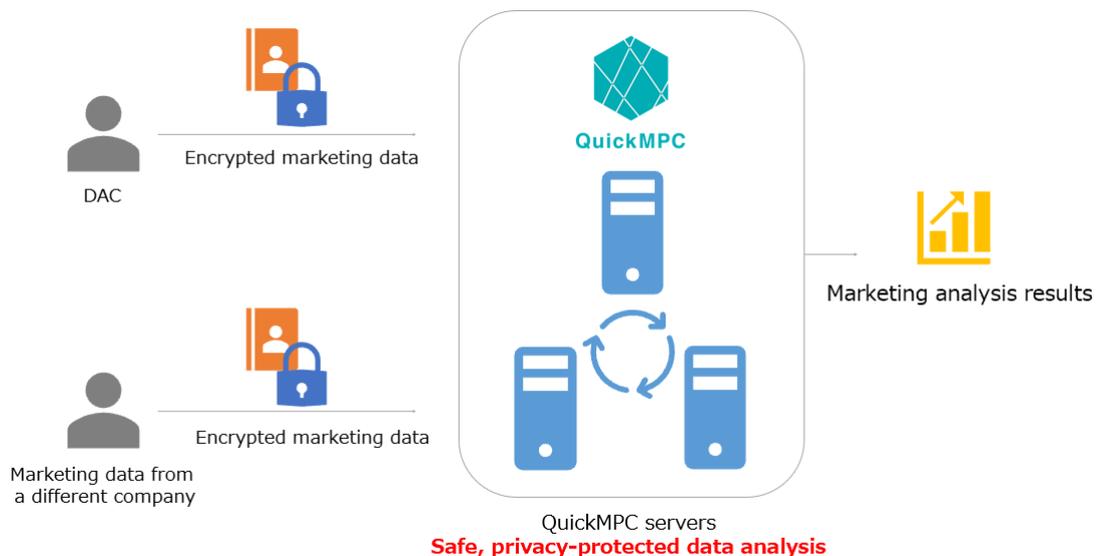


News Release

D.A.Consortium Inc.
Acompany Co., Ltd.

DAC and Acompany conduct a privacy-protected data analysis verification test using secure computing

Tokyo, May 18, 2021 – D.A.Consortium Inc. (DAC) and Acompany Co., Ltd. (Acompany) are pleased to announce that they have conducted a privacy-protected data analysis verification test using secure computing (a technology that enables computations of encrypted data) for the first time in Japan in the digital marketing field. The test indicated that comprehensive analysis of personal data in its encrypted form is possible, which is beneficial for privacy protection. Furthermore, the test revealed that the accuracy and speed of the data analysis was at a level suitable for practical application. DAC and Acompany will continue to work to establish marketing data analysis methods using secure computing to provide greater safety and security for all types of data-based digital marketing.



■ Background

In digital marketing, data from numerous organizations, such as customer information owned by a client company and related information owned by other companies, is frequently matched and analyzed. If personal data is handled as raw data (unprocessed data), a data leak would pose a significant risk, making privacy protection an important issue. One technology that safely integrates and analyzes data is secure computing, which can make computations of encrypted data (encoded data). This technology enables both privacy protection and data distribution, providing safety and security necessary for a Society 5.0(*1) era.

DAC, which offers digital marketing services, and Acompany, which has expertise in secure computing technologies, decided to conduct a verification test to determine if secure computing is capable of providing secure and safe marketing data analysis.

■ Verification test details

With data owned by DAC client companies and marketing data from DAC's DMP AudienceOne[®](*2), and using Acompany's secure computing software QuickMPC(*3), the two companies conducted verification tests to determine whether or not data can be analyzed in its encrypted form and if the data analysis results were comparable to conventional methods. In addition, the two companies also tested to see if the data analysis results were at a level appropriate for practical application.

○ Verification method

- 1 Built a secure computing environment on a cloud server
- 2 Prepared a data set for analysis, as follows:

- ◆ User survey data owned by a DAC client company (two types -- 20s and 30s)
 - 218,436 items (72,812 people x 3 attributes)
 - 637,212 items (212,404 people x 3 attributes)
- ◆ AudienceOne[®] data of the same users related to their attribute values and conversion values (two types -- 20s and 30s)
 - 871,255 items (28,105 people x 31 attributes)
 - 2,550,649 items (82,279 people x 31 attributes)

- 3 Computed the correlation between conversion values and attributes and survey results in a secure computing environment.
As a control experiment, the same computations were made with raw data as a comparison.

○ Test results

- Confirmed that marketing analysis of encrypted data is possible.
- Determined that processing time, from data encryption to analysis, was several minutes.
- Certified that the mean absolute error of the verification test was less than 0.001, as follows, proving that it is useful on a practical level. (Generally speaking, a correlation coefficient with a mean absolute error of less than 0.001 indicates suitability for practical use.)

	Mean absolute error
20s	0.000034
30s	0.000037

As indicated above, the verification test clearly demonstrated that it is possible to match and analyze encrypted data in a secure computing environment.

DAC and Acompany will continue to conduct further verification tests of more advanced data analyses in a secure computing environment. The two companies will also work together to jointly develop and provide solutions and services that promote data distribution businesses while protecting privacy.

(*1) Society 5.0 is a new human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace (virtual world) and physical space (real world). It follows the hunting society (Society 1.0), agricultural society (Society 2.0), industrial society (Society 3.0) and information society (Society 4.0).
Cabinet Office : https://www8.cao.go.jp/cstp/society5_0/

(*2) AudienceOne[®] links, integrates and analyzes both offline and online purchase history and location data with CRM, ad delivery results, panel research results and a variety of other forms of data to aid in visualization. Using a patented technology, it also features a cross-device, cross-channel estimate function. Utilizing a wealth of linked channels, AudienceOne[®] offers a full-funnel, high-precision

marketing environment to provide a wide range of measurements, from new customer acquisition to improvements in LTV among existing customers. AudienceOne® data include demographic data such as gender, age and income, approximately 1,400 types of psychographic data (hobbies, interests, etc), as well as specialized data provided by AudienceOne® partner companies (Data Exchange).
<https://solutions.dac.co.jp/audienceone>

- (*3) QuickMPC is a MPC (Multi-party Computation) secure computing engine that enables statistical analysis and machine learning of data in its encrypted form. Because computations can be conducted on data without revealing the content, personally identifiable information, customer data and other types of confidential information can be utilized without exposure to outside parties.

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<Corporate Information>

■ D.A.Consortium Inc. <https://www.dac.co.jp/english/>

Since its establishment in 1996 during the early days of online advertising, DAC is leading the industry in market formation and growth as it steadily expands its operations with the digital transformation of information and lifestyles.

Currently, DAC operates advertising and marketing businesses centered on digital technology both in Japan and overseas. The company provides comprehensive support, from consulting and planning to ad space purchasing, selling, management and results analysis. With a firm understanding of the characteristics of different media, DAC also produces creative, develops and provides solutions that bridge its wealth of data with advanced technologies, and supports global promotional initiatives.

With the mission, “**Empowering the digital future,**” DAC will continue to be at the forefront in creating new forms of advertising and marketing and providing new value to society.

Representative : Masaya Shimada, President & CEO
Head Office : Yebisu Garden Place Tower, 4-20-3, Ebisu, Shibuya-ku, Tokyo
Established : December 1996
Business : Online media transaction related business, Solution business,
Ad Operations Business

■ Acompany Co., Ltd. <https://acompany.tech>

With a mission “**to evolve data into the value**”, Acompany focuses on secure computing as a means to handle private and other types of confidential information and ensure security when utilizing data.

Representative : Ryosuke Takahashi, President & CEO
Head Office : JR Gate Tower 27F OICX, 1-1-3, Meieki, Nakamura-ku, Nagoya
Established : June 2018
Business : Development and provision of secure computing systems

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