

Mission Impossible? – Government Agencies And Public Relations For Nuclear Waste Disposal In Germany

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ABSTRACT

Analyzing the opinion of European Union citizens on the management of radioactive waste a survey of 2005 shows that European citizens are almost unanimous in the need to set up a national strategy for high-level radioactive waste disposal without any delay. While 45% of respondents consider that deep underground disposal represents the most appropriate solution for long-term management of highly radioactive waste, 38% disagree. In Germany, the divergence of opinion in this respect is very distinctive and it shows that, although experts believe that selected sites represent the best solution, this information does not yet seem to have reached the public. The reason therefore is both the lack of interesting and comprehensible information of issues related to nuclear waste disposal and negative media reporting always coupled with the negative public opinion about atomic energy in Germany.

In Germany the siting, construction, and operation of a repository for radioactive waste is a national task. The Federal Institute for Geosciences and Natural Resources (BGR) as a government agency is a praxis oriented science institution and works on all geo-scientific and geotechnical issues in the German repository projects. According to its guidance BGR feels responsible for the future generations and is acting as a neutral and anticipatory partner for ministries and public authorities as well as a partner for industry, society and scientific bodies. BGR therefore is able to accomplish an essential contribution for the creation of public confidence for radioactive waste disposal due to precise public relations strategies.

Sending the following messages is BGR's communication goal:

- Radioactive waste can safely be disposed of in deep geological formations
- BGR is capable to handle this duty and delivers reliable results

Thereby, the BGR is in particular interested in passing on the information about nuclear waste disposal in a current and comprehensible way as well as providing arguments for the public.

Public relations work of an authority should not only be to announce its expertise and consulting competence, but also to operate goal-orientated as a dialog partner and service provider of the community. BGR as an authority meets this challenge with the important advantage of accomplishing scientific research itself and thus delivering information first hand.

In the last couple of years the BGR started to build its own public relations about its geoscientific research. The BGR is planning to handle this dialog continuously, consistently and even strengthen it. Target groups are not only experts like research institutes and universities but also citizens as well as stakeholders and decision-makers. In order to fulfil the requirements of a

comprehensive geoscientific information policy, BGR is continuously enlarging its internet offer to the issue of nuclear waste disposal. The focal point concentrates on current, generally understandable words as well as on a wide offer about expert knowledge. Furthermore, the citizens shall be informed and sensitized about the topic of disposal by continuous media and press work.

Through a target group oriented information in dialog with the public, state authorities, such as the BGR, are able to give an important contribution for the objectification of the “disposal issue” and therefore more acceptance which could lead to more confidence within the population. BGR is analyzing international public relation concepts and is trying to transfer suitable strategies for public communication in Germany. Experience in Public Relations in the last four years have demonstrated that exciting as well as comprehensible information and an active presentation of topics of nuclear waste disposal consistently showed positive reactions and interest among the participants.

INTRODUCTION

World-wide, there is no repository for spent fuel elements from nuclear power plants and high-level radioactive waste from reprocessing to this day. In Europe and in other countries different geological formations are being investigated for their suitability as host rocks for repositories for radioactive waste. In this respect the geological situation in the respective countries is the decisive factor for the safety assessment in the national disposal concepts.

In addition to the geoscientific and technical issues for the radioactive waste management policy, however, the public acceptance to the disposal projects plays a significant role and the information policy of the authorities involved is very distinctive in each country.

In Germany at an early stage the radioactive waste disposal policy has been based on the decision that all types of radioactive waste are to be disposed of in deep geological formations. Waste disposal activities in Germany concentrated so far on salt formations (Gorleben, Morsleben) and iron ore-/clay formations (Konrad) as host rocks as well as barrier rocks. Since the very beginning of the investigations at the potential disposal sites an intense discussion has taken place about both the selection of the sites and particularly the information policy of the authorities involved. The paper describes the particular situation of the German public information policy and shows possible solutions to improve the public relations work and offers recommendations to increase public acceptance for the disposal projects in Germany.

RADIOACTIVE WASTE DISPOSAL IN GERMANY

Institutional framework

In Germany the siting, construction, and operation of a repository for radioactive waste is a national task. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is responsible for nuclear safety and radiation protection (Fig. 1).

Apart from the BMU, the following federal ministries take part in radioactive waste management, according to their specific responsibilities:

- The Federal Ministry of Economics and Technology (BMWi)
- The Federal Ministry of Education and Research (BMBF).

The Federal Office for Radiation Protection (BfS) as a federal authority in the portfolio of the BMU implements federal administrative tasks in the field of radiation protection, including radiation protection precaution and nuclear safety, the transport of radioactive substances, and the management of radioactive waste (including establishing and operating the federal installations for its safekeeping and final disposal). It supports BMU technically and scientifically in these fields.

Under German nuclear and radiation protection law, the Federal States (Länder) execute administrative duties (licensing and supervision) not performed by the federal authorities. Thus, the Federal States are the competent licensing authorities for all nuclear installations concerning their territory, except interim storage facilities for spent nuclear fuel. They supervise all nuclear facilities except repositories. To ensure the uniform implementation of the German Atomic Energy Act, the Federal States are subject to federal supervision by the BMU.

The Federal Institute for Geosciences and Natural Resources (BGR) advises the German Federal Government in all scientific work. Because geoscientific research in the field of nuclear waste disposal concerns the realization of repository projects, BGR also performs geoscientific and geotechnical research in the German repository projects, especially the geological exploration of locations, the characterization of the host rocks and the analyses of future scenarios for the long-term safety assessment.

Another organization, the Company for the Construction and Operation of Waste Repositories (DBE), is assigned to plan, design, construct, and operate the repository. DBE, on behalf of BfS, is also responsible for the exploration of the Gorleben site [1].

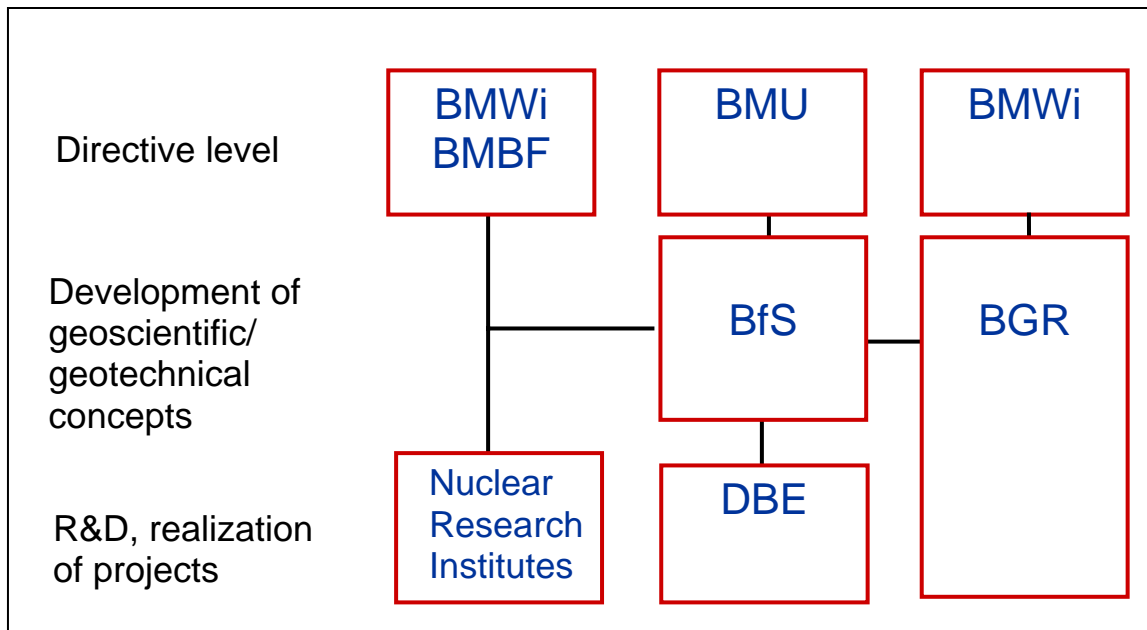


Fig. 1. Authorities involved in nuclear waste disposal in Germany (Explanations in the text).

National repository projects

- **The Konrad Mine**

The Konrad Mine is an abandoned iron ore mine in the state of Lower Saxony in the northern part of Germany. The iron ore formation at a depth between 800 m and 1,300 m is considered to be the host rock for emplacement of radioactive waste, with negligible heat generation.

In 1982, an application for initiation of a plan-approval procedure for the Konrad Repository Project was submitted by the PTB (Federal Institute for Physics and Metrology), the legal predecessor of BfS. The licensing documents, the so-called Plan Konrad, were submitted in 1990. The plan-approval procedure for the Konrad Repository was completed and a resolution adopted on June 5, 2002. The plan-approval decision for the Konrad Repository provides permission for a radioactive waste package volume (with negligible heat generation), limited to approximately 300,000 m³, to be emplaced in the Konrad Mine. However, operation cannot commence until the court has reached a decision on the objections that have been filed [2]. Almost one billion Euros have been spent so far for the exploration and the stand-by operation of the potential repository in the Konrad mine.

- **The Morsleben Repository**

In the former German Democratic Republic (GDR), the abandoned Morsleben Salt Mine was selected as the site of an underground repository for low- and intermediate-level waste with low concentrations of α -emitting radionuclides. The repository is located in a salt structure.

The emplacement of low- and intermediate-level waste continued after the reunification of the two German states. Operation of the Morsleben Repository was discontinued by 1998, and with an amendment of the German Atomic Energy Act, all permission to dispose of radioactive waste in the Morsleben Mine became ineffective in 2002. The plan-approval procedure is now limited to backfilling and sealing the repository.

- **The Gorleben Repository Project**

Since 1979, the Gorleben Salt Dome in the state of Lower Saxony has been investigated as the potential repository site for radioactive waste. Gorleben was selected in 1977 on the basis of geoscientific and economic criteria. Following the agreement between the German Federal Government and the utility companies, exploration of the Gorleben Salt Dome was discontinued in 2000 for at least three and at most ten years, in order to clarify conceptual and safety questions. Twelve, mainly generic topics have been identified to be investigated in total, and have been processed by BfS.

In 2005, a synthesis report issued by BfS came to the conclusion, that with the exception of a small number of questions, generic issues regarding the disposal of radioactive wastes in

Germany essentially do not require further fundamental research. Conceivable gaps of knowledge which might arise will have to be answered with respect to a particular repository [3]. At the Gorleben site about 1.3 billion Euros have been spent so far for the exploration and the stand-by operation.

Current status of the German waste management policy

On June 11, 2001, the German Federal Government signed an agreement with representatives of the national nuclear energy utility companies [4]. The essential part of this so-called “consensus paper” was the decision to phase out the use of nuclear energy. In addition to the consequences for the energy policy, the entire German radioactive waste isolation strategy and especially the repository projects were affected by the agreement.

In 1999, the BMU established the Committee on a Site Selection Procedure for Repository Sites (AkEnd). The AkEnd Committee had been commissioned to develop a traceable procedure for the identification and selection of a site for the disposal of all types of radioactive waste in Germany. The procedure was to provide for the participation of the public in an appropriate form and to include substantiated criteria. The development was to take place on a scientific basis in an objective and unprejudiced manner without exclusion of relevant aspects. The procedure should be both suitable for safe disposal and acceptable to the public [5].

In 1999 the AkEnd Committee started its work, as a technical scientific body working independently and free of directives within the framework of the established objectives. The final recommendations were published at the end of 2002 [6]. According to the recommendations of the AkEnd, political and social agreement on the site selection procedure should take place in the next phase. The BMU, however, did not carry out its study of the AkEnd proposal so far.

PUBLIC OPINIONS

Opinion of European Citizens

Analyzing the opinion of European Union citizens on the management of radioactive waste a survey of 2005) [7] shows that European citizens are almost unanimous in their vote to the need to set up a national strategy for high-level radioactive waste disposal without any delay. But while 45% of respondents consider that deep underground disposal represents the most appropriate solution for long-term management of highly radioactive waste, 37 % disagree (Fig. 2).

The divergence of opinion in this respect is very distinctive and it shows that, although experts believe that the disposal in deep geological formations at the selected sites represent the best solution, this information does not yet seem to have reached the public. One reason for this contradiction might be that only a quarter of citizens of the European Union feel that they are well informed about radioactive waste (25%). Consequently, citizens who consider themselves well-informed about radioactive waste see fewer risks in the transport and disposal of this type of waste.

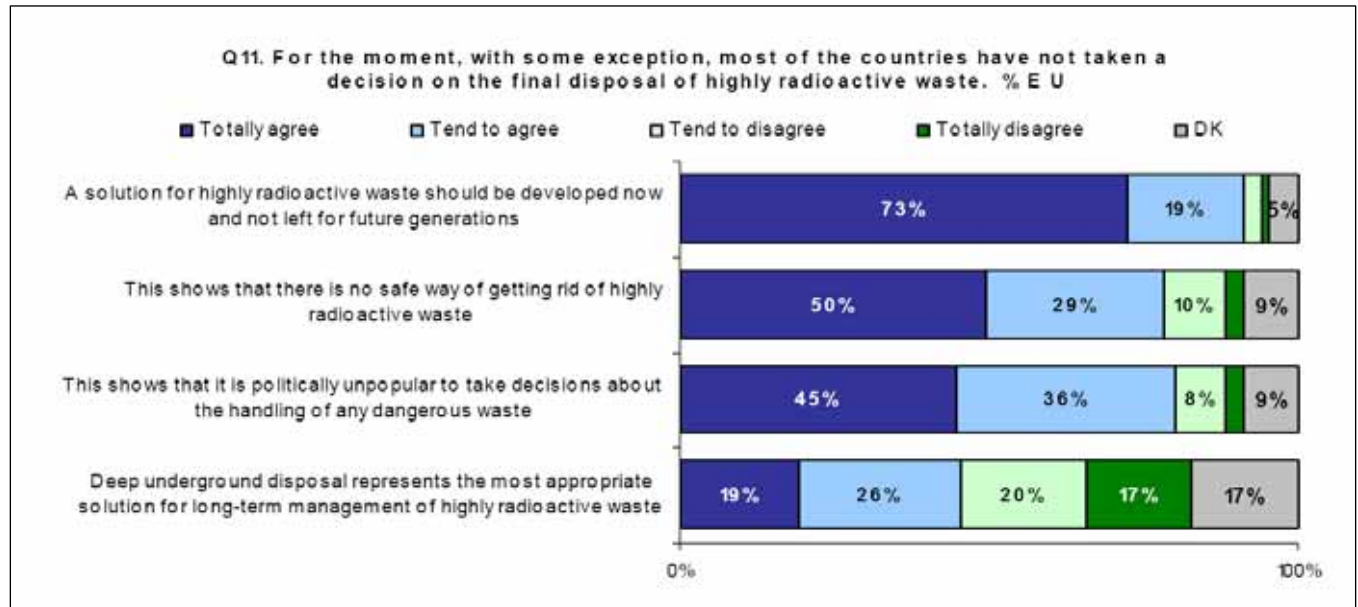


Fig. 2. Opinion of European Union citizens on the management of radioactive waste [7].

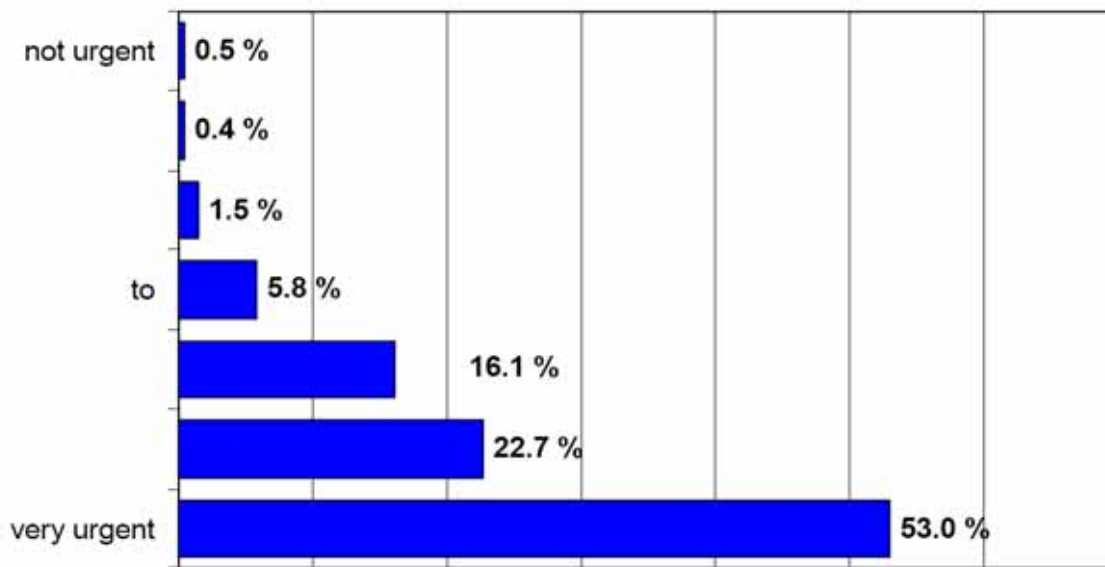
Asked about their opinion on the hypothetical event that an underground disposal site for radioactive waste were to be built near their home, the possible impact on the environment and health was the principle fear expressed by respondents (53%) followed by the risk of radioactive leak when the site is in operation (28%).

Opinion of German Citizens

Although 34% Germans feel well informed about radioactive waste disposal, that is 9 % more than the EU-average, it is obvious that information given to the German citizens haven't reached them correctly. The reason therefore could be caused by the special historical and complex political situation of radioactive waste disposal in Germany described above.

Summarizing representative polls conducted by the AkEnd in 2001 in Germany [8] 76 % of those questioned see the problem of disposal as very urgent (53 %) to urgent (23 %). If, however, a repository would be built in one's own region, 80 % of those questioned would be against it (Fig. 3).

In your opinion, how urgent is the issue of final disposal?



What would be your attitude towards the realisation of a repository in your region?

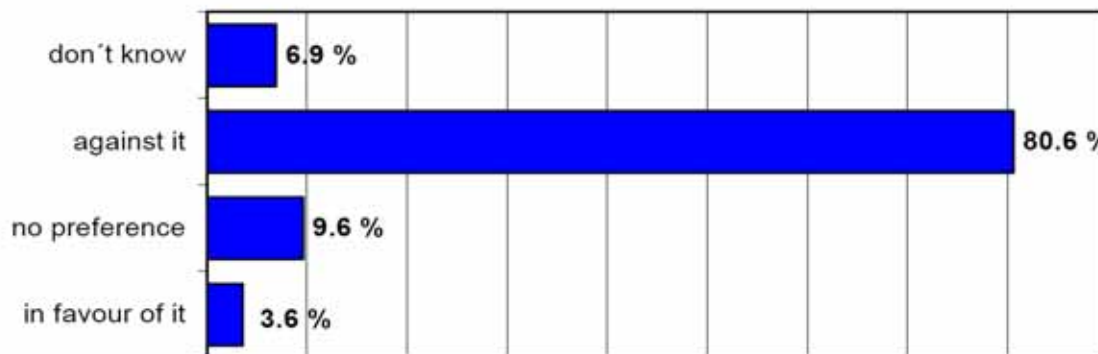


Fig. 3. Public view of the German citizens to radioactive waste disposal [7] (Explanations in the text).

In autumn 2006 Germany politicians restarted the discussion whether to continue exploring only Gorleben as repository site or searching alternative sites and investigating their suitability. The discussion was caused by a press report in a north German newspaper in August 2006. In the report data of a study conducted by BGR with a map of alternative clay formations were published. The study BGR compiled on behalf of the Federal Ministry of Economy and Technology (BMWi). The objective of the study was not to identify repository sites but to identify the regions to be focused on in the case that the German government would decide to enforce a new site selection. BGR identified potential regions in Germany in clay formations as an alternative to the so far in Germany investigated host rocks salt and granite. The results were based on available literature and borehole data. Main part of the report is a map with two major

regions in Germany with clay formations, a greater region in the north and a smaller region in the south.

In the affected regions the immediate reaction of the citizens and local politicians was to argue against a potential repository in their neighborhood. The following discussion was well reported in the media especially in the local press. The citizens' first behavior in the affected regions could be summarized with:

- Astonishment
- Negation
- Indignation
- Coordinating immediate resistance
- Planning insurgency

Secondly citizens' arguments for refusal were:

- infuriation, that local authorities were not informed first of all
- fears, that tourism in the region may be affected
- building a citizens' action committee, find arguments against the suitability of the region, strongest political resistance in the case ascertained planning will follow
- enforcing the phase-out policy of atomic energy in Germany

Special arguments were made in the southern part of Germany recommending the Gorleben project which is located in the northern part:

- The German government has spent billions of Euros to investigate the Gorleben Salt dome – so why search for other sites
- The Gorleben site so far has proved to be suitable as a repository
- Salt domes are best quality and more suitable than other host rocks.

The comment of the Federal Minister for the Environment (BMU) came immediately. He pointed out that Politicians from southern Germany, where the highest amount of atomic energy in Germany is produced, will hold on to atomic energy but disclaim an alternative repository site to Gorleben salt dome in their territory. This behavior pattern, known as NIMBY syndrome (Not In My Backyard), confirms the representative polls conducted by the AkEnd in 2001 in Germany (Fig. 3).

Further on the BMU commented the discussion with his own (forsa) poll asking 1005 interviewees in September 2006. A quarter (25%) of German citizens is in favour of continuing investigation of the Gorleben Salt dome and to operate it in case it is proved to be suitable. Most of the interviewees (66%) have the opinion that several sites have to be proved to choose afterwards the most appropriate site.

In addition, the BMU stated that it is always a question of how to ask the population. If somebody asks: Do you agree with building of a repository in your backyard, normally 100 % of the population would concern: No. But the Minister forgot to announce the questions asked in his own poll.

BGR AND PUBLIC RELATIONS

The Federal Institute for Geosciences and Natural Resources (BGR) is the central geoscientific authority providing advice to the German Federal Government and German industry in all geo-relevant questions. BGR is a praxis oriented science institution and works on all geo-scientific and geotechnical issues in the German repository projects. According to its guidance BGR feels responsible for the future generations and acts as a neutral and anticipatory partner for ministries and public authorities as well as a partner for industry, society and scientific bodies.

The institutional framework concerning radioactive waste disposal in Germany and allocation of responsibilities within this structure is extremely complex. Furthermore issues related to nuclear waste disposal are coupled with a common negative opinion about atomic energy in Germany and also negative media reporting. Obviously, there is a lack of interesting and comprehensible information about a scientific complex subject such as radioactive waste disposal.

Besides all political interests and ethical and societal questions geosciences are the key to responsible decision making for a safe repository in deep geological formations. BGR, therefore, as a geoscientific authority, is able to accomplish an essential contribution for the creation of public confidence for radioactive waste disposal due to precise public relations strategies sending the following messages:

- Radioactive waste can safely be disposed of in deep geological formations
- BGR is capable to handle this duty and delivers reliable results.

Hence, the BGR is in particular interested in passing on the information about nuclear waste disposal in a current and comprehensible way as well as keeping arguments ready for the public. Public relations work of an authority should not only be focused to announce its expertise and consulting competence, but also to operate goal-orientated as a dialog partner and service provider of the community. BGR as an authority meets this challenge with the important advantage of accomplishing scientific research itself and thus delivering information first hand.

In the last couple of years the BGR started to build its own public relations about its geoscientific research. The BGR is planning to handle this dialog continuously, consistently and even strengthen it. Target groups are not only experts like research institutes and universities but also citizens as well as stakeholders and decision-makers.

In order to fulfill the requirements of a comprehensive geoscientific information policy, BGR is consistently enlarging its internet offer to the issue of nuclear waste disposal (<http://www.bgr.bund.de/DE/Themen/Geotechnik/>). Since BGR's internet relaunch in November 2005 statistics of visited pages show a doubling of inquiries to issues of radioactive waste disposal. The focal point concentrates on current, generally understandable words as well as on a wide offer about expert knowledge. Furthermore, the citizens shall be informed and sensitized about the topic of disposal by continuous media and press work.

The citizens' reactions to BGR's "Clay Study" show that communication between BGR and the public is very important in order to clarify open questions. Journalists from press, radio, TV as well as politicians or private persons asked BGR about the press report immediately.

OUTLOOK

Through a target group oriented information in dialog with the publicity, state authorities, such as BGR, are able to give an important contribution for the objectification of the complex “disposal topic”. Thus, more confidence can be achieved which could lead to more acceptance within the population. BGR is analyzing international public relation concepts and is trying to transfer suitable strategies for public communication in Germany. Experiences in public relations in the last four years have demonstrated that exciting as well as comprehensible information and an active presentation of topics of nuclear waste disposal consistently showed positive reactions and interest among the participants.

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