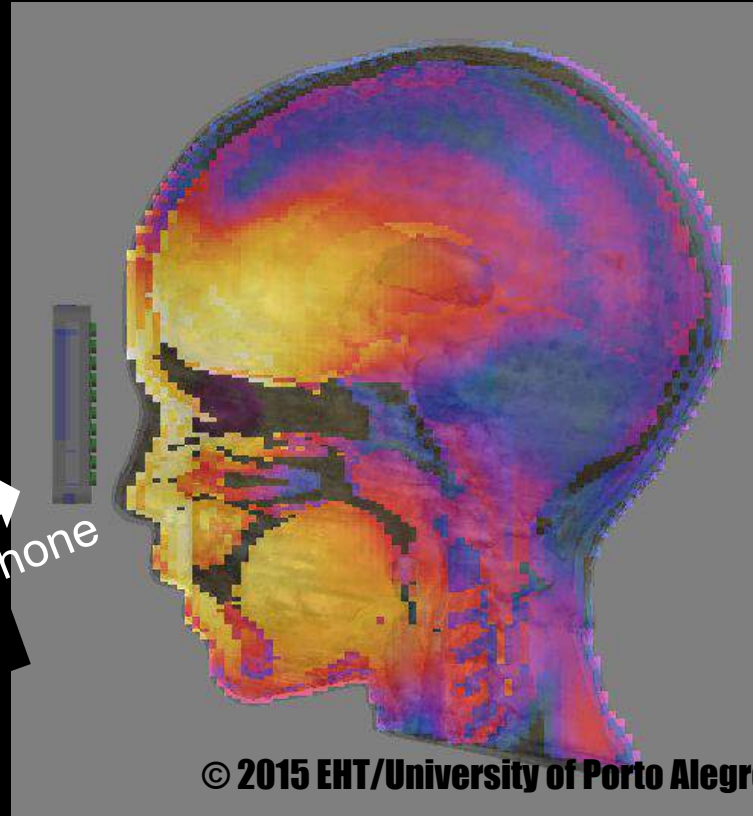


# Radiofrequency Exposure at Eye Plane of 6 Year Old Child Smartphone Placed In Cardboard Simulation Position



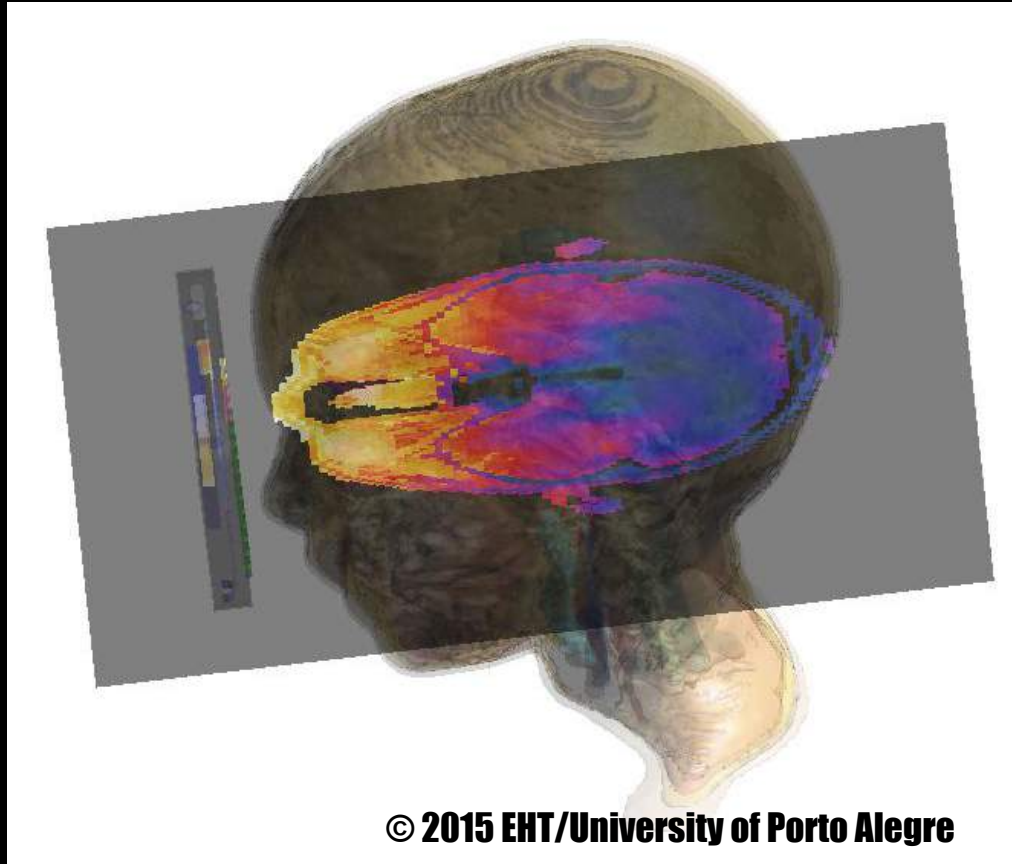
Smartphone



Smartphone placed in a position to the eyes as it would be placed using the cardboard virtual reality holder.



# Dose (SAR) in an Horizontal (axial) Slice at the Eyes 6 Year Old Boy Model



1g-psSAR = 1.08 W/kg over  
the entire head  
1g-psSAR = 0.86 W/kg in the  
eyes

White and yellow are the  
highest doses. Smartphone  
Placed In Cardboard  
Simulation Position



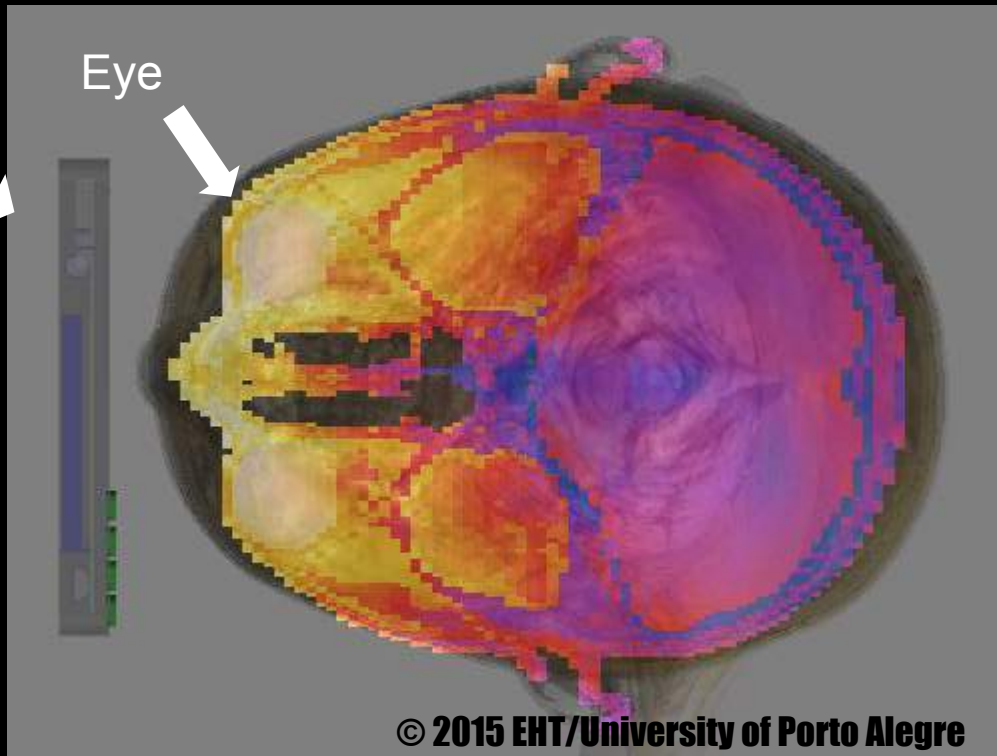
# Radiofrequency Dose into Eyes of 6 Year Old Child Model

## Smartphone Placed In Cardboard Simulation Position

Smartphone



Eye



1g-psSAR (peak value axial slice) in Thelonious (6 year old male) anatomically correct model, 0dB=2mW/g, 50 db scale. for smartphone placed in a position to the eyes as it would be placed using the cardboard virtual reality holder.



White and yellow are the highest doses.

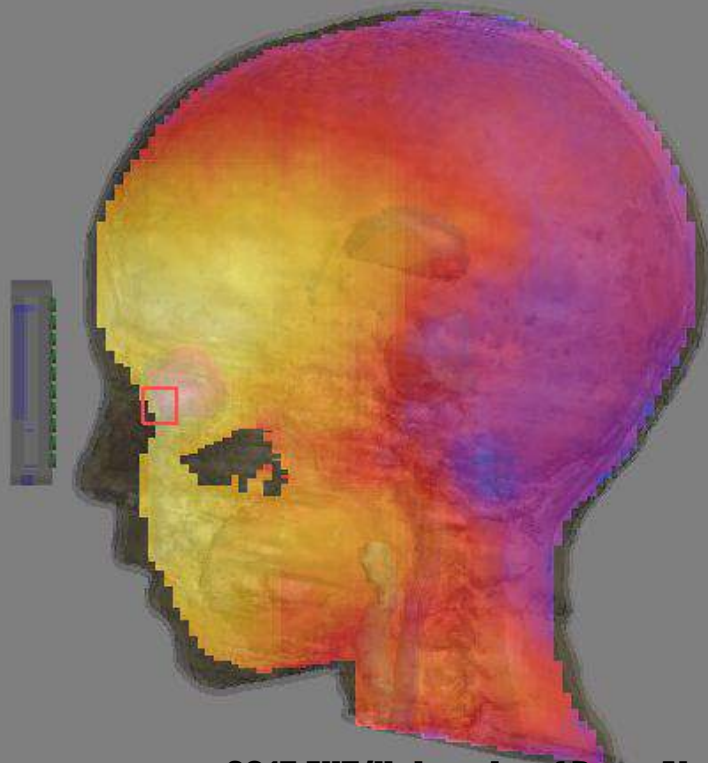
© 2015 EHT/University of Porto Alegre

# Exposure (SAR) in Vertical (sagittal) Slice at the Eye 6 Year Old Boy Model

1g-psSAR = 1.08 W/kg over the  
entire head and  
1g-psSAR = 0.86 W/kg in the  
eyes.

The red cube is the location of the peak  
dose.

White and yellow are the highest doses.



© 2015 EHT/University of Porto Alegre



Smartphone Placed In  
Cardboard Simulation  
Position

# Dielectric Properties of the Three Models - SAM, Duke and Thelonus.

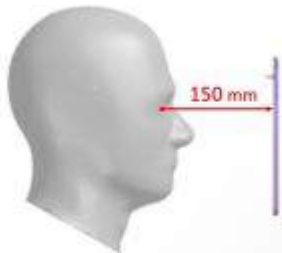
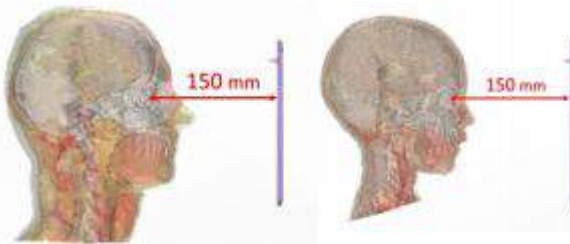


Fig 3. SAM phantom (homogeneous model) with Tablet.

TABLE III. Dielectric Properties of the SAM Phantom following the IEEE 1528 Recommended Practice @ 2.45 GHz

Material	$\sigma$ [S/m]	$\epsilon_r$
SAM shell	0.0016	5
SAM liquid	1.8	39.2

Homogenous liquid inside skull does not realistically represent brain and skull.



(a) 34 years old adult man (DUKE)

(b) 6 years old child (THELONIOUS)

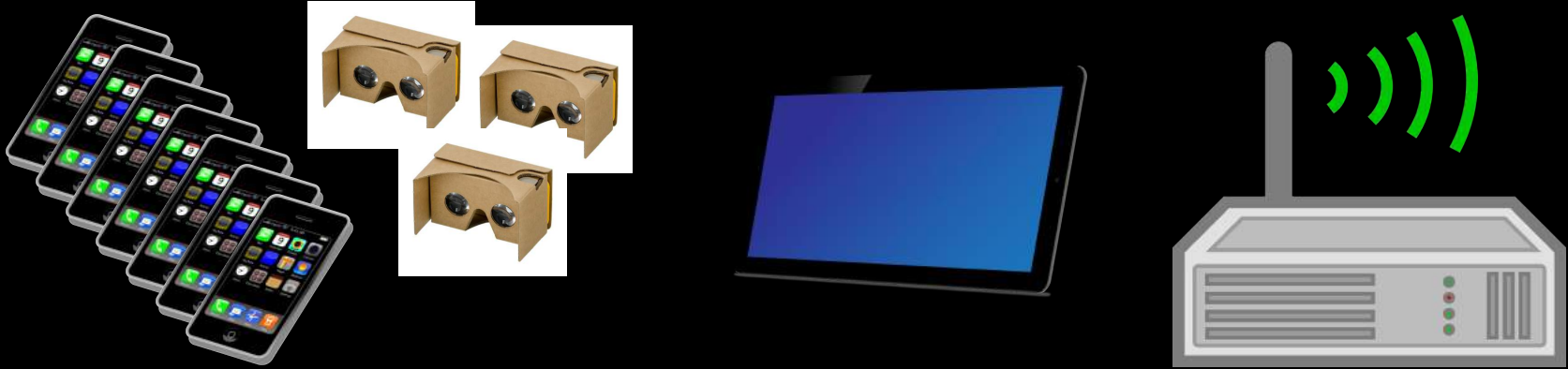
TABLE IV. Dielectric Properties of the Heterogeneous Models Tissues @ 2.45 GHz.

Tissue	$\epsilon_r$	$\sigma$ [S/m]
Fat	0.104	5.280
Bone	0.394	11.381
Grey matter	1.807	48.911
White matter	1.215	36.167
Liquid Brain	66.243	3.457
Muscle	52.729	1.738
Aqueous Humor	68.208	2.478
Skin	38.007	1.464
Crystalline	44.625	1.504
Sclera	52.628	2.033
Vitreous Humor	68.208	2.478
Cerebellum	30.145	1.088
Nerve	30.145	1.088

With Anatomical Models Different Properties of Different Body Tissues are considered.



# The Google Expeditions Kit



“kits included **ASUS smartphones** and **a tablet** for the teacher, plus **a router** to connect all the devices and run the Expeditions app offline.”

[TechCrunch.com](http://TechCrunch.com)





## ASUS Zen Phone 2



### RF Exposure Information (SAR)

“To reduce exposure to RF energy, use a hands-free accessory or other similar option to keep this device away from your head and body.”

**“Carry this device at least 10 mm away from your body to ensure exposure levels remain at or below the as-tested levels.** Choose the belt clips, holsters, or other similar body-worn accessories which do not contain metallic components to support operation in this manner. Cases with metal parts may change the RF performance of the device, including its compliance with RF exposure guidelines, in a manner that has not been tested or certified, and use of such accessories should be avoided.”

“Canada, Industry Canada (IC) Notices Radio Frequency (RF) Exposure Information  
The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency exposure limits.  
**The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.**”:

from [http://dlcdnet.asus.com/pub/ASUS/ZenFone/ZE550ML/e10509\\_ze550ml\\_ze551ml\\_em\\_0601.pdf](http://dlcdnet.asus.com/pub/ASUS/ZenFone/ZE550ML/e10509_ze550ml_ze551ml_em_0601.pdf)

# Children Are Wearing Metal Glasses Despite Warnings That Metal so Close to Brain and Phone Could Intensify Radiation



Youtube video <https://www.youtube.com/watch?v=0vj3D3spkxc>

Metal can increase radiation exposure by refocusing radiation. The end result can be higher than tested levels to specific tissues.



from Youtube video <https://www.youtube.com/watch?v=mKrbDKO5f08>



The **ASUS Zen Phone 2 Manual** states: Cases with metal parts may change the RF performance of the device, including its compliance with RF exposure guidelines, in a manner that has not been tested or certified, and use of such accessories should be avoided. [http://dlcdnet.asus.com/pub/ASUS/ZenFone/ZE550ML/e10509\\_ze550ml\\_ze551ml\\_em\\_0601.pdf](http://dlcdnet.asus.com/pub/ASUS/ZenFone/ZE550ML/e10509_ze550ml_ze551ml_em_0601.pdf)





# Wireless Routers Placed Near Children in Classroom



From 11/2016 CBS News Report.



# Information Provided to Schools by Google

## GOOGLE CARDBOARD

### PRODUCT SAFETY INFORMATION

- Take frequent breaks while using Cardboard. If you experience nausea, discomfort, eye strain, or disorientation, immediately discontinue using Cardboard.
- Cardboard is not for use by children without adult supervision.
- Do not use Cardboard while driving, walking, or otherwise by being distracted from real world situations that prevent you from obeying traffic or safety laws. Do not drive or operate heavy machinery immediately after using Cardboard if you feel impaired or disoriented.
- If you have had or could be prone to seizures, consult a doctor before using Cardboard.

# Schools That Host Google Expeditions Agree To Terms

“The school will need to sign the attached agreement and email it back with all of the the above details.

Please note that, unfortunately, we are unable to share Expeditions with children under the age of 7 at this time.”

-From emails obtained by public information request RE: Google Expeditions staff to Irvine Unified School District.

**Ralanna Chavez**

---

**From:** Tim Decker <timothydecker@google.com>  
**Sent:** Monday, October 05, 2015 3:43 PM  
**To:** Kris Levine  
**Cc:** Stan Machesly  
**Subject:** Re: Google Expeditions  
**Attachments:** ExpeditionsAgreement.doc (1).pdf

Hiy Kria,

Thanks for the call! Here's the information we will need in order to confirm your school's participation in the Expeditions Pioneer Program:

- The school will need to fill out this [template](#) with all of the scheduling details for the visit, including the name and contact information for the teachers and the grades and subjects they teach. Please note, we are looking for as many students to experience Expeditions as possible and would encourage you to schedule different classes (the same teacher can lead multiple classes if you would like).
- Our team can send one Expeditions Leader with three kits and run three concurrent classes (up to 18 classes in a day) if we have a minimum of two school personnel to help the Expeditions Leader throughout the day.
- If hosting concurrent sessions, we ask the school to identify three classrooms for 3 kits for the day and rotate classes in and out, as it will make it easier to run the Expeditions sessions.
- Each teacher [should pick an Expedition](#) to use in their class and this should be added to the schedule -- remember, the Expedition is an aid to a lesson plan, not the lesson itself!
- All participating teachers will need to be briefed on the features and functionality of the app in a quick 15-30 minute training session prior to their scheduled classes. If teachers are unable to meet before school, we can brief them right before the class and they should be good to go!
- The school will need to sign the attached agreement and email it back with all of the above details. Please note that, unfortunately, we are unable to share Expeditions with children under the age of 7 at this time.
- [Here](#) is more information about the program to share with all interested teachers!

Soon, you'll be able to take the students in your school to almost anywhere you can imagine!

Best,  
Tim

---

Tim Decker | Vaco Project Manager | GAPE - Expeditions | Mountain View 1385

# GOOGLE EXPEDITIONS EVENT AGREEMENT

“School will conduct the event in accordance with all current product safety information...”

“School will supervise children participating in the Event and will not allow children under seven years of age to participate in the event ...”

“Waivers and Release: ...School hereby waives, releases and forever discharges Google and its agents... of and from any and all claims, demands, debts, contracts, expenses causes of action, lawsuits, damages and liabilities of every kind and nature, whether known or in law and equity, that School had or may have, arising from or in any way related to the Event or Cardboard , including claims for property damages, personal injuries and death, whether caused by the ordinary negligence of Google or any other party...”

## GOOGLE EXPEDITIONS EVENT AGREEMENT

This Google Expeditions Event Agreement (the "Agreement") is entered into by and between Google Inc. ("Google") and the school or other institution indicated below ("School"), requesting School's participation in a Google Expeditions event (the "Event") at School's facilities. This Agreement is effective as of the date School accepts this Agreement by signing below.

1. **Signatory.** The Signatory below is entering into this Agreement on behalf of School. The Signatory represents and warrants that: (i) he or she has full legal authority to bind School to this Agreement; (ii) he or she has read and understands this Agreement; and (iii) he or she agrees, on behalf of School, to this Agreement.

2. **Access.** School permits Google (through its affiliates, employees, agents, and contractors) to enter School's facilities in connection with the Event. Google will make any facilities access plans available in writing to School. Google must have suitable insurance coverage or self-insure for all of Google's activities at the facilities during the Event.

### 3. Event.

(A) School will conduct the Event in accordance with all Google Cardboard ("Cardboard") product safety information (currently available at <https://www.google.com/cardboard/index.html>) and any other guidelines made available by Google (the "Event Guidelines"). School will ensure that all its employees, agents, and contractors who participate in the Event have reviewed and understood the Event Guidelines.

(B) School will supervise all individually partial participants for the Event.

(C) School will supervise all children participating in the Event, and will not allow any children under seven (7) years of age to participate in the Event.

(D) School and Google will each be responsible for their respective costs in connection with the Event.

4. **Waiver and Release.** On behalf of itself and its employees, agents, and contractors, School hereby waives, releases, and forever discharges Google and its agents, providers, officials, participants, employees, officers, directors, affiliates, successors, representatives, agents, and assigns, of and from any and all claims, demands, debts, contracts, expenses, causes of action, lawsuits, damages and liabilities, of every kind and nature, whether known or unknown, in law or equity, that School (or any of its employees, agents, or contractors) had or may have, arising from or in any way related to the Event (including claims for property damages, personal injuries, and death, whether caused by the ordinary negligence of Google or any other party, except that this waiver does not apply to any acts of gross negligence or intentional misconduct).

5. **Limitation of Liability.** EXCEPT FOR ANY MATTERS FOR WHICH LIABILITY CANNOT BE EXCLUDED OR LIMITED UNDER APPLICABLE LAW, IN NEITHER PARTY SHALL BE LIABLE UNDER THIS AGREEMENT FOR DIRECT, INDIRECT, CONSEQUENTIAL, EXEMPLARY, OR PUNITIVE DAMAGES, EVEN IF THE PARTY KNEW OR SHOULD HAVE KNOWN THAT SUCH DAMAGES WERE POSSIBLE AND EVEN IF DIRECT DAMAGES DO NOT SATISFY A REMEDY, AND IN NEITHER PARTY MAY BE HELD LIABLE UNDER THIS AGREEMENT FOR MORE THAN ONE THOUSAND U.S. DOLLARS.

6. **Miscellaneous.** All legal notices must be in English, in writing, and addressed to the other party's primary contact, which for Google is [legal@google.com](mailto:legal@google.com). Any amendment must be in writing and signed by both parties. This Agreement constitutes the entire agreement between the parties and supersedes all other agreements between the parties relating to its subject matter. If School is in any country or state government entity, then the parties agree to remain bound regarding governing law and venue. If School is not one of those entities, then the following applies: This Agreement is governed by California law, excluding that state's choice of law rules, FOR ALL PURPOSES, AND IN ALL COUNTRIES. THE PARTIES CONSENT TO PERSONAL JURISDICTION IN, AND THE EXCLUSIVE VENUE OF, THE COURTS IN SANTA CLARA COUNTY, CALIFORNIA.

Date: \_\_\_\_\_

Signature of signatory: \_\_\_\_\_

Name of signatory: \_\_\_\_\_

Title of signatory: \_\_\_\_\_

School (or other institution) name and address: \_\_\_\_\_

# GOOGLE EXPEDITIONS EVENT AGREEMENT

5. Limitation of Liability: EXCEPT FOR ANY MATTERS FOR WHICH LIABILITY CANNOT BE EXCLUDED FROM OR LIMITED UNDER APPLICABLE LAW: (A) NEITHER PARTY WILL BE LIABLE UNDER THIS AGREEMENT FOR LOST REVENUES OR INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, OR PUNITIVE DAMAGES, **EVEN IF THE PARTY KNEW OR SHOULD HAVE KNOWN THAT SUCH DAMAGES WERE POSSIBLE** AND EVEN IF DIRECT DAMAGES DO NOT SATISFY A REMEDYING (B) NEITHER PARTY MAY BE HELD LIABLE UNDER THIS AGREEMENT FOR MORE THAN ONE THOUSAND US DOLLARS.

## GOOGLE EXPEDITIONS EVENT AGREEMENT

This Google Expeditions Event Agreement (the "Agreement") is entered into by and between Google Inc. ("Google") and the school or other institution (collectively "School") regarding School's participation in a Google Expeditions event (the "Event") at School's facilities. This Agreement is effective as of the date School accepts this Agreement by signing below.

1. **Agreement.** The signatory below is entering into this Agreement on behalf of School. This signatory represents and warrants that (i) he or she has full legal authority to bind School to this Agreement; (ii) he or she has read and understands this Agreement; and (iii) he or she agrees, on behalf of School, to this Agreement.

2. **Access.** School permits Google through its affiliates, employees, agents, and contractors (i) to enter School's facilities in connection with the Event; Google will utilize any facilities unless noted otherwise in writing by School; Google may have visitors (including members of the press) at Google's facilities at the location during the Event.

### 3. Event.

(A) School will attend the Event in accordance with all Google Cardboard ("Cardboard") product safety information (currently available at [www.google.com/cardboard](http://www.google.com/cardboard)) and any other guidelines made available by Google (the "Event Guidelines"). School will ensure that all its employees, agents, and contractors who participate in the Event have reviewed and understood the Event Guidelines.

(B) School will secure all necessary parental permissions for the Event.

(C) School will supervise all children participating in the Event, and will not allow any children under seven (7) years of age to participate in the Event.

(D) School and Google will each be responsible for their respective costs in connection with the Event.

4. **Warrant and Release.** On behalf of itself and its employees, agents, and contractors, School hereby warrants, releases, and forever discharges Google and its agents, contractors, employees, officers, directors, affiliates, successors, representatives, agents, and assigns, of and from any and all claims, demands, suits, demands, expenses, costs of action, damages, charges, and expenses, present and not present, whether known or unknown, in law or equity, that School or any of its employees, agents, or contractors had or may have, arising from or in any way related to the Event or Cardboard, including claims for property damage, personal injury, and death, whether caused by the ordinary negligence of Google or any other party, in so far as that this warrant should apply to any party's gross negligence or intentional misconduct.

5. **Limitation of Liability.** EXCEPT FOR ANY MATTERS FOR WHICH LIABILITY CANNOT BE EXCLUDED OR LIMITED UNDER APPLICABLE LAW, NEITHER PARTY WILL BE LIABLE UNDER THIS AGREEMENT FOR LOST REVENUES OR INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, OR PUNITIVE DAMAGES, EVEN IF THE PARTY SHOULD HAVE KNOWN THAT SUCH DAMAGES WERE POSSIBLE AND EVEN IF DIRECT DAMAGES DO NOT SATISFY A REMEDYING AND NEITHER PARTY MAY BE HELD LIABLE UNDER THIS AGREEMENT FOR MORE THAN ONE THOUSAND US DOLLARS.

6. **Entire Agreement.** All legal notices must be in English, in writing, and addressed to the other party's primary contact, which for Google is [legal@google.com](mailto:legal@google.com). Any agreement must be in writing and signed by both parties. This Agreement lists out all agreed-upon terms; the parties are advised and release all other agreements (except the parties' intent to modify) that Google or School is a party, owner, or other governmental entity, then the parties agree to remain silent regarding governing law and venue. If School will not use of these entities, then the following applies: This Agreement is governed by California law, including that state's choice of law provisions, and the parties agree to the exclusive jurisdiction of the courts in Santa Clara County, California.

7. **Force and Effect of this Agreement.** This Agreement is intended to be a binding contract between the parties and is not intended to be a statement of intent or a non-binding agreement.

8. **Signature.** The signature of the signatory below is required for this Agreement to be effective.

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What Do Manufacturers State  
On the Safety of  
*Other* Virtual Reality Systems?

# Health and Safety Information **SAMSUNG GEAR VR**

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## Seizures

Some people (about 1 in 4000) may have severe dizziness, seizures, epileptic seizures or blackouts triggered by light flashes or patterns, and this may occur while they are watching TV, playing video games or experiencing virtual reality, even if they have never had a seizure or blackout before or have no history of seizures or epilepsy. Such seizures are more common in children and young people under the age of 20. Anyone who has had a seizure, loss of awareness, or other symptom linked to an epileptic condition should consult with a doctor before using the Gear VR.

The Gear VR headset should not be used by children under the age of 13, as these children may be at increased health and safety risk.

- A comfortable virtual reality experience requires an unimpaired sense of motion and balance. Do not use the Gear VR when you are tired, need sleep, are under the influence of alcohol or drugs, are hung-over, have digestive problems, are under emotional stress or anxiety, or when suffering from cold, flu, headaches, migraines, or earaches, as this can increase your susceptibility to adverse symptoms.

# OCULUS Virtual Reality

## Health and Safety Brochure



**WARNING** Seizures: Some people (about 1 in 4000) may have severe dizziness, seizures, epileptic seizures or blackouts triggered by light flashes or patterns, and this may occur while they are watching TV, playing video games or experiencing virtual reality, even if they have never had a seizure or blackout before or have no history of seizures or epilepsy. Such seizures are more common in children and young people under the age of 20. Anyone who has had a seizure, loss of awareness, or other symptom linked to an epileptic condition should consult a doctor before using the Gear VR.



**WARNING** Children: The Gear VR should not be used by children under the age of 13. Adults should monitor children (age 13 and older) who are using or have used the Gear VR for any of the symptoms described below, and should limit the time children spend

# Gotan: Virtual Reality

## Health and Safety Brochure



### **Seizures:**

Some people (about 1 in 4000) may have severe dizziness, seizures, epileptic seizures or blackouts triggered by light flashes or patterns, and this may occur while they are watching TV, playing video games or experiencing virtual reality, even if they have never had a seizure or blackout before or have no history of seizures or epilepsy. Such seizures are more common in children and young people under the age of 20. Anyone who has had a seizure, loss of awareness, or other symptom linked to an epileptic condition should see a doctor before using the headset.



### **Children:**

This product should not be used by children under the age of 13. Adults should monitor children (age 13 and older) who are using or have used the Headset for any of the symptoms described below,