

YouEHelp – Distributed Participatory Emergency Aid


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Nowadays mankind has developed extensive methods of emergency services to aid those in distress, however even in the most advanced countries emergency response can take minutes when the play is for seconds and first aid is still very important. YouEHelp is an application for community based distributed distress calling, which gets nearby people aware of incident and according to situation asks them for help (first aid, etc.) or urges them to evacuate (e.g. industrial disasters). Important features are location awareness and signalling, assisted situation assessment, messaging for specific situations, misuse prevention and also purposeful use of modern mobile devices' possibilities.

YouEHelp
Distributed Participatory
Emergency Aid

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<h3>Overview</h3> <p>YouEHelp</p> <ul style="list-style-type: none"> - mobile phone application - detects call on 112/911 and allows user to broadcast request for help - P2P communication with retransmission to increase range - adding details as they come, even with subsequent requests <p>and more (misuse prevention, location pointer, range management, cold start, ...)</p>	<h3>Model scenario</h3> 	<h3>Improvements</h3> <div style="display: grid; grid-template-columns: 1fr 1fr; gap: 5px;"> <div style="background-color: #fff; padding: 2px;"> <p>COLD START</p> <ul style="list-style-type: none"> - not a safety concern - media propagation - no discovery of others </div> <div style="background-color: #fff; padding: 2px;"> <p>PRIVACY</p> <ul style="list-style-type: none"> - anonymous relaying - device decides, personal data are not leaving it </div> <div style="background-color: #fff; padding: 2px;"> <p>MISUSE</p> <ul style="list-style-type: none"> - cross-verification - traceable - not worse than 112 - criminal prosecution </div> <div style="background-color: #fff; padding: 2px;"> <p>OVERREACTION</p> <ul style="list-style-type: none"> - selective alerting - adaptive warning - intelligent propagation </div> <div style="background-color: #fff; padding: 2px;"> <p>Person info</p> <ul style="list-style-type: none"> - trainings, skills - available equipment - chronic diseases - verification </div> <div style="background-color: #fff; padding: 2px;"> <p>Sensing</p> <ul style="list-style-type: none"> - rapid deceleration - very high temperature - external warnings </div> <div style="background-color: #fff; padding: 2px;"> <p>Adaptivity</p> <ul style="list-style-type: none"> - high speed travel => on highway => put traffic buttons first </div> <div style="background-color: #fff; padding: 2px;"> <p>Location</p> <ul style="list-style-type: none"> - GPS - GSM BTS/WiFi APs - accelerometers - magnetic sensors </div> <div style="background-color: #fff; padding: 2px;"> <p>Assistance</p> <ul style="list-style-type: none"> - first aid instructions - safety rules - advices </div> <div style="background-color: #fff; padding: 2px;"> <p>Non-emergency</p> <ul style="list-style-type: none"> - communication, games - prioritization - clear differentiation </div> </div>
<p>1. Alice (witnesses acute allergic reaction)</p> <ul style="list-style-type: none"> - calls 112 - broadcasts distress message in YouEHelp, enters details <div style="display: flex; justify-content: space-around; font-size: 0.8em;"> <div style="border: 1px solid black; padding: 2px; background-color: #333; color: white;"> <p>You called 112, call community help, too?</p> <p><input type="button" value="Yes"/> <input type="button" value="No"/></p> </div> <div style="border: 1px solid black; padding: 2px; background-color: #333; color: white;"> <p>What is getting on?</p> <p><input type="button" value="Medical"/> <input type="button" value="Car accident"/> <input type="button" value="Fire"/></p> </div> </div> <p style="font-size: 0.7em;">Bluetooth (10 m) </p> <p style="font-size: 0.7em;">Wi-Fi indoors (30 m) </p> <p style="font-size: 0.7em;">Wi-Fi outdoors (100 m) </p>	<p>2. Bob (emergency health professional)</p> <ul style="list-style-type: none"> - gets alerted about situation - is guided precisely to John - has no first aid kit with him, adds item request into message <div style="display: flex; justify-content: space-around; font-size: 0.8em;"> <div style="border: 1px solid black; padding: 2px; background-color: #333; color: white;"> <p>Medical emergency nearby!</p> <p><input type="button" value="Respond"/> <input type="button" value="Leave out"/></p> </div> <div style="border: 1px solid black; padding: 2px; background-color: #333; color: white;"> <p>Need more?</p> <p><input type="button" value="Supplies"/> <input type="button" value="People"/></p> </div> </div>	<p>3. Carol (has severe allergy, always carries epinephrine autoinjector)</p> <ul style="list-style-type: none"> - gets alerted about request - rushes to assist Alice and Bob <p style="color: orange; font-weight: bold; font-size: 0.9em;">Together, immediate help is given before ambulance vehicle arrives and takes over the situation.</p> <p style="font-size: 0.8em;">* Not limited to medical emergencies only.</p>