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Namespace GTiff2Tiles.Core

Classes

[GdalWorker](#)

Gdal's methods to work with input files

Class GdalWorker

Gdal's methods to work with input files

Inheritance

System.Object
GdalWorker

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTiff2Tiles.Core](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public static class GdalWorker
```

Fields

ConvertCoordinateSystemOptions

Options for GdalWarp to convert GeoTiff's coordinate system;

Requires you to add target system param (-t_srs). Included default args:

```
-overwrite -multi -srcnodata 0  
-of GTiff -ot Byte
```

Declaration

```
public static readonly string[] ConvertCoordinateSystemOptions
```

Field Value

Type	Description
System.String[]	

SrsEpsg3857

-t_srs EPSG:3857

Declaration

```
public static readonly string[] SrsEpsg3857
```

Field Value

Type	Description
System.String[]	

SrsEpsg4326

-t_srs EPSG:4326

Declaration

```
public static readonly string[] SrsEpsg4326
```

Field Value

Type	Description
System.String[]	

TempFileName

Name for temporary (converted) GeoTiff

Includes .tif extension, looks like: _tmp_converted.tif

Declaration

```
public static readonly string TempFileName
```

Field Value

Type	Description
System.String	

Methods

ConfigureGdal()

Initialize Gdal, if it hadn't been initialized yet

Declaration

```
public static void ConfigureGdal()
```

ConvertGeoTiffToTargetSystemAsync(String, String, CoordinateSystem, IProgress<Double>)

Converts current GeoTiff to a new GeoTiff with target [CoordinateSystem](#) through GdalWarp

Declaration

```
public static Task ConvertGeoTiffToTargetSystemAsync(string inputFilePath, string outputFilePath, CoordinateSystem targetSystem, IProgress<double> progress = null)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path
System.String	outputFilePath	Output GeoTiff's path
CoordinateSystem	targetSystem	Target CoordinateSystem
System.IProgress<System.Double> progress		GdalWarp's progress null by default

Returns

Type	Description
System.Threading.Tasks.Task	

Exceptions

Type	Condition
System.NotSupportedException	

GetCoordinateSystem(String)

Gets supported coordinate system from proj string of GeoTiff

Declaration

```
public static CoordinateSystem GetCoordinateSystem(string projString)
```

Parameters

Type	Name	Description
System.String	projString	Proj string of input GeoTiff

Returns

Type	Description
CoordinateSystem	Input file's CoordinateSystem

Exceptions

Type	Condition
System.ArgumentNullException	

GetGeoTransform(String)

Gets the coordinates and pixel sizes of image

Declaration

```
public static double[] GetGeoTransform(string inputFilePath)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path

Returns

Type	Description
System.Double[]	Array of double coordinates and pixel sizes if everything is OK; null otherwise

GetImageBorders(String, Size, CoordinateSystem)

Gets the coordinates borders of the input Geotiff file

Declaration

```
public static (GeoCoordinate minCoordinate, GeoCoordinate maxCoordinate) GetImageBorders(string inputFilePath, Size size, CoordinateSystem coordinateSystem)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path
Size	size	Image's Sizes
CoordinateSystem	coordinateSystem	Image's coordinate system

Returns

Type	Description
System.ValueTuple< GeoCoordinate , GeoCoordinate >	System.ValueTuple`2 of GeoCoordinates of image's borders

Exceptions

Type	Condition
System.ArgumentNullException	
System.NotSupportedException	

GetProjString(String)

Gets proj System.String of input file

Declaration

```
public static string GetProjString(string inputFilePath)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path

Returns

Type	Description
System.String	Proj System.String if everything OK; null otherwise

GetProjStringAsync(String)

Gets proj System.String of input file

Declaration

```
public static Task<string> GetProjStringAsync(string inputFilePath)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path

Returns

Type	Description
System.Threading.Tasks.Task<System.String>	Proj System.String if everything OK; null otherwise

InfoAsync(String, String[])

Runs GdalInfo with passed parameters

Declaration

```
public static Task<string> InfoAsync(string inputFilePath, string[] options = null)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path

Type	Name	Description
System.String[] options		Array of string parameters for GdalInfo
		null by default

Returns

Type	Description
System.Threading.Tasks.Task<System.String>	System.String from GdalInfo if everything OK; null otherwise

WarpAsync(String, String, String[], IProgress<Double>)

Runs GdalWarp with passed parameters

Declaration

```
public static Task WarpAsync(string inputFilePath, string outputFilePath, string[] options, IProgress<double> progress = null)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path
System.String	outputFilePath	Output file's path
System.String[] options		Array of string parameters
		See ConvertCoordinateSystemOptions field for more info
System.IProgress<System.Double> progress		GdalWarp's progress
		null by default

Returns

Type	Description
System.Threading.Tasks.Task	

Exceptions

Type	Condition
System.ArgumentNullException	

Namespace GTiff2Tiles.Core.Constants

Classes

[Date Time Patterns](#)

String patterns for System.DateTime

[File Extensions](#)

Used extensions

[Geodesic](#)

Some geo-related constants

[Proj](#)

Proj constants

Class DateTimePatterns

String patterns for System.DateTime

Inheritance

System.Object
DateTimePatterns

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTiff2Tiles.Core.Constants](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public static class DateTimePatterns
```

Fields

LongWithMs

Year, month, date, hour, minutes, seconds, ms

Declaration

```
public const string LongWithMs = "yyyyMMddHHmmssfff"
```

Field Value

Type	Description
System.String	

ShortToDate

Year, month and date

Declaration

```
public const string ShortToDate = "yyyyMMdd"
```

Field Value

Type	Description
System.String	

ShortToMonth

Year and month

Declaration

```
public const string ShortToMonth = "yyyyMM"
```

Field Value

Type	Description
System.String	

Class FileExtensions

Used extensions

Inheritance

System.Object
FileExtensions

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [G TIFF2 Tiles.Core.Constants](#)

Assembly: G TIFF2 Tiles.Core.dll

Syntax

```
public static class FileExtensions
```

Fields

Jpg

.jpg

Declaration

```
public const string Jpg = ".jpg"
```

Field Value

Type	Description
System.String	

Png

.png

Declaration

```
public const string Png = ".png"
```

Field Value

Type	Description
System.String	

Tif

.tif

Declaration

```
public const string Tif = ".tif"
```

Field Value

Type	Description
System.String	

Webp

.webp

Declaration

```
public const string Webp = ".webp"
```

Field Value

Type	Description
System.String	

Class Geodesic

Some geo-related constants

Inheritance

System.Object
Geodesic

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [G TIFF2 Tiles.Core.Constants](#)

Assembly: G TIFF2 Tiles.Core.dll

Syntax

```
public static class Geodesic
```

Fields

EquatorRadius

Radius of Earth, measured at equator

Declaration

```
public const double EquatorRadius = 6378137
```

Field Value

Type	Description
System.Double	

OriginShift

Approximately 20037508.342789244

Declaration

```
public const double OriginShift = 20037508.342789244
```

Field Value

Type	Description
System.Double	

PolarRadius

Radius of Earth, measured at pole

Declaration

```
public const double PolarRadius = 6356752.314245
```

Field Value

Type	Description
System.Double	

Class Proj

Proj constants

Inheritance

System.Object
Proj

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTiff2Tiles.Core.Constants](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public static class Proj
```

Fields

DatumWgs84

For EPSG:4326 AND World Mercator, BUT not Spherical Mercator (EPSG:3857)

Declaration

```
public const string DatumWgs84 = "+datum=WGS84"
```

Field Value

Type	Description
System.String	

LongLatFull

Full PROJ string for LongLat (EPSG:4326) projection

Declaration

```
public static readonly string LongLatFull
```

Field Value

Type	Description
System.String	

MercFull

Full PROJ string for Spherical Mercator (EPSG:3857) projection

Declaration

```
public static readonly string MercFull
```

Field Value

Type	Description
System.String	

NoDefs

+no_defs

Declaration

```
public const string NoDefs = "+no_defs"
```

Field Value

Type	Description
System.String	

ProjLongLat

+proj=longlat

Declaration

```
public const string ProjLongLat = "+proj=longlat"
```

Field Value

Type	Description
System.String	

ProjMerc

+proj=merc

Declaration

```
public const string ProjMerc = "+proj=merc"
```

Field Value

Type	Description
System.String	

Namespace **GTiff2Tiles.Core.Coordinates**

Classes

[Coordinate](#)

Basic implementation of [ICoordinate](#) interface

[GeoCoordinate](#)

Class for geographical coordinates

[GeodeticCoordinate](#)

Class for EPSG:4326 coordinates

[MercatorCoordinate](#)

Class for EPSG:3857 coordinates

[PixelCoordinate](#)

Coordinates in pixels

Interfaces

[ICoordinate](#)

Interface for any coordinate

Class Coordinate

Basic implementation of [ICoordinate](#) interface

Inheritance

System.Object
Coordinate
[GeoCoordinate](#)
[PixelCoordinate](#)

Implements

[ICoordinate](#)
System.IEquatable<[ICoordinate](#)>

Inherited Members

System.Object.Equals(System.Object, System.Object)
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTiff2Tiles.Core.Coordinates](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public class Coordinate : ICoordinate, IEquatable<ICoordinate>
```

Constructors

Coordinate(Double, Double)

Create instance of class

Declaration

```
protected Coordinate(double x, double y)
```

Parameters

Type	Name	Description
System.Double	x	X coordinate value
System.Double	y	Y coordinate value

Properties

X

X coordinate value or Longitude

Declaration

```
public virtual double X { get; }
```

Property Value

Type	Description
------	-------------

Type	Description
System.Double	

Y

Y coordinate value or Latitude

Declaration

```
public virtual double Y { get; }
```

Property Value

Type	Description
System.Double	

Methods

Add([Coordinate](#))

Sum coordinates

Declaration

```
public Coordinate Add(Coordinate other)
```

Parameters

Type	Name	Description
Coordinate	other	Coordinate to add

Returns

Type	Description
Coordinate	New coordinate

DegreesToRadians(Double)

Converts degrees to radians

Declaration

```
public static double DegreesToRadians(double degrees)
```

Parameters

Type	Name	Description
System.Double	degrees	Value to convert

Returns

Type	Description
System.Double	Converted radians

Divide([Coordinate](#))

Divide coordinates

Declaration

```
public Coordinate Divide(Coordinate other)
```

Parameters

Type	Name	Description
Coordinate	other	Coordinate to divide on

Returns

Type	Description
Coordinate	New coordinate

Equals(ICoordinate)

Declaration

```
public bool Equals(ICoordinate other)
```

Parameters

Type	Name	Description
ICoordinate	other	

Returns

Type	Description
System.Boolean	

Equals(Object)

Declaration

```
public override bool Equals(object obj)
```

Parameters

Type	Name	Description
System.Object	obj	

Returns

Type	Description
System.Boolean	

Overrides

```
System.Object.Equals(System.Object)
```

GetHashCode()

Declaration

```
public override int GetHashCode()
```

Returns

Type	Description
System.Int32	

Overrides

System.Object.GetHashCode()

Multiply(Coordinate)

Multiply coordinates

Declaration

```
public Coordinate Multiply(Coordinate other)
```

Parameters

Type	Name	Description
Coordinate	other	Coordinate to multiply

Returns

Type	Description
Coordinate	New coordinate

RadiansToDegrees(Double)

Converts radians to degrees

Declaration

```
public static double RadiansToDegrees(double radians)
```

Parameters

Type	Name	Description
System.Double	radians	Value to convert

Returns

Type	Description
System.Double	Converted degrees

Round<T>(T, Int32)

Round coordinate's [X](#) and [Y](#)

Declaration

```
public static T Round<T>(T coordinate, int digits)
    where T : ICoordinate
```

Parameters

Type	Name	Description
------	------	-------------

Type	Name	Description
T	coordinate	ICoordinate to round
		System.Int32 digits

Returns

Type	Description
T	Rounded coordinate

Type Parameters

Name	Description
T	Child of ICoordinate

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentOutOfRangeException	

Round<T>(Int32)

Round coordinate's [X](#) and [Y](#)

Declaration

```
public T Round<T>(int digits)
    where T : ICoordinate
```

Parameters

Type	Name	Description
		Number of digits after zero in return false
System.Int32 digits		Must be bigger or equal, than 0

Returns

Type	Description
T	Rounded coordinate

Type Parameters

Name	Description
T	Child of ICoordinate

Subtract(Coordinate)

Subtruct coordinates

Declaration

```
public Coordinate Subtract(Coordinate other)
```

Parameters

Type	Name	Description
Coordinate	other	Coordinate to subtract

Returns

Type	Description
Coordinate	New coordinate

ToNumber(Int32, Size, Boolean)

Calculate [Number](#) for current [ICoordinate](#)

Declaration

```
public virtual Number ToNumber(int z, Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
System.Int32	z	Zoom
		Must be >= 0
Size	tileSize	ITile 's size
System.Boolean tmsCompatible	Is ITile	tms compatible?

Returns

Type	Description
Number	Number in which this ICoordinate belongs

Operators

Addition(Coordinate, Coordinate)

Sum coordinates

Declaration

```
public static Coordinate operator +(Coordinate coordinate1, Coordinate coordinate2)
```

Parameters

Type	Name	Description
Coordinate	coordinate1	Coordinate 1
Coordinate	coordinate2	Coordinate 2

Returns

Type	Description
Coordinate	New coordinate

Division(Coordinate, Coordinate)

Divide coordinates

Declaration

```
public static Coordinate operator /(Coordinate coordinate1, Coordinate coordinate2)
```

Parameters

Type	Name	Description
Coordinate	coordinate1	Coordinate 1
Coordinate	coordinate2	Coordinate 2

Returns

Type	Description
Coordinate	New coordinate

Equality(Coordinate, Coordinate)

Check two coordinates for equality

Declaration

```
public static bool operator ==(Coordinate coordinate1, Coordinate coordinate2)
```

Parameters

Type	Name	Description
Coordinate	coordinate1	Coordinate 1
Coordinate	coordinate2	Coordinate 2

Returns

Type	Description
System.Boolean	true if coordinates are equal; falseotherwise

Inequality(Coordinate, Coordinate)

Check two coordinates for non-equality

Declaration

```
public static bool operator !=(Coordinate coordinate1, Coordinate coordinate2)
```


Parameters

Type	Name	Description
Coordinate	coordinate1	Coordinate 1
Coordinate	coordinate2	Coordinate 2

Returns

Type	Description
System.Boolean	true if coordinates are not equal; falseotherwise

Multiply([Coordinate](#), [Coordinate](#))

Multiply coordinates

Declaration

```
public static Coordinate operator *(Coordinate coordinate1, Coordinate coordinate2)
```

Parameters

Type	Name	Description
Coordinate	coordinate1	Coordinate 1
Coordinate	coordinate2	Coordinate 2

Returns

Type	Description
Coordinate	New coordinate

Subtraction([Coordinate](#), [Coordinate](#))

Subtruct coordinates

Declaration

```
public static Coordinate operator -(Coordinate coordinate1, Coordinate coordinate2)
```

Parameters

Type	Name	Description
Coordinate	coordinate1	Coordinate 1
Coordinate	coordinate2	Coordinate 2

Returns

Type	Description
------	-------------

Type	Description
Coordinate	New coordinate

Implements

[ICoordinate](#)
System.IEquatable<T>

Class GeoCoordinate

Class for geographical coordinates

Inheritance

System.Object
[Coordinate](#)
GeoCoordinate
[GeodeticCoordinate](#)
[MercatorCoordinate](#)

Implements

[ICoordinate](#)
System.IEquatable<[ICoordinate](#)>

Inherited Members

[Coordinate.X](#)
[Coordinate.Y](#)
[Coordinate.DegreesToRadians\(Double\)](#)
[Coordinate.RadiansToDegrees\(Double\)](#)
[Coordinate.Round<T>\(Int32\)](#)
[Coordinate.Round<T>\(T, Int32\)](#)
[Coordinate.Equals\(Object\)](#)
[Coordinate.GetHashCode\(\)](#)
[Coordinate.Equals\(ICoordinate\)](#)
[Coordinate.Add\(Coordinate\)](#)
[Coordinate.Subtract\(Coordinate\)](#)
[Coordinate.Multiply\(Coordinate\)](#)
[Coordinate.Divide\(Coordinate\)](#)
System.Object.Equals(System.Object, System.Object)
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTile2Tiles.Core.Coordinates](#)

Assembly: GTile2Tiles.Core.dll

Syntax

```
public class GeoCoordinate : Coordinate, ICoordinate, IEquatable<ICoordinate>
```

Constructors

GeoCoordinate(Double, Double)

Create instance of class

Declaration

```
protected GeoCoordinate(double x, double y)
```

Parameters

Type	Name	Description
System.Double	x	X coordinate value
System.Double	y	Y coordinate value

Methods

GetNumbers(GeoCoordinate, GeoCoordinate, Int32, Size, Boolean)

Gets [Numbers](#) for specified [GeoCoordinates](#)

Declaration

```
public static (Number minNumber, Number maxNumber) GetNumbers(GeoCoordinate minCoordinate, GeoCoordinate maxCoordinate, int z, Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
GeoCoordinate	minCoordinate	Minimal GeoCoordinate
GeoCoordinate	maxCoordinate	Maximal GeoCoordinate
System.Int32	z	Zoom
Size	tileSize	ITile 's size Must be square

Type	Name	Description
System.Boolean	tmsCompatible	Is ITile tms compatible?

Returns

Type	Description
System.ValueTuple< Number , Number >	System.ValueTuple`2 of Numbers

Resolution(Int32, Size, CoordinateSystem)

Resolution for given zoom level (measured at Equator)

Declaration

```
public static double Resolution(int z, Size tileSize, CoordinateSystem coordinateSystem)
```

Parameters

Type	Name	Description
System.Int32	z	Zoom Must be >= 0
Size	tileSize	ITile 's size Must be square

[CoordinateSystem](#) coordinateSystem Coordinate system

Returns

Type	Description
System.Double	Resolution value or -1.0 if something goes wrong

Exceptions

Type	Condition
System.NotSupportedException	

ToNumber(Int32, Size, Boolean)

Calculate [Number](#) for current [ICoordinate](#)

Declaration

```
public override Number ToNumber(int z, Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
System.Int32	z	Zoom Must be >= 0
Size	tileSize	ITile 's size

System.Boolean tmsCompatible Is [ITile](#) tms compatible?

Returns

Type	Description
Number Number	in which this ICoordinate belongs

Overrides

[Coordinate.ToNumber\(Int32, Size, Boolean\)](#)

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

ToPixelCoordinate(Int32, Size)

Convert current [GeoCoordinate](#) to [PixelCoordinate](#)

Declaration

```
public virtual PixelCoordinate ToPixelCoordinate(int z, Size tileSize)
```

Parameters

Type	Name	Description
System.Int32 z		Zoom
		Must be >= 0
Size	tileSize	ITile 's size
		Must be square

Returns

Type	Description
PixelCoordinate	Converted PixelCoordinate

ZoomForPixelSize(Int32, Size, CoordinateSystem, Int32, Int32)

Calculate zoom from known pixel size

Declaration

```
public static int ZoomForPixelSize(int pixelSize, Size tileSize, CoordinateSystem coordinateSystem, int minZ = 0, int maxZ = 32)
```

Parameters

Type	Name	Description
System.Int32	pixelSize	Pixel size
Size	tileSize	ITile 's size
		Must be square
CoordinateSystem	coordinateSystem	Coordinate system
System.Int32	minZ	Minimal zoom
		Must be >= 0 and lesser or equal, than <code>maxZ</code>
		0 by default
System.Int32	maxZ	Maximal zoom
		Must be >= 0 and bigger or equal, than <code>minZ</code>
		32 by default

Returns

Type	Description
System.Int32	Approximate zoom value

Implements

[ICoordinate](#)
System.IEquatable<T>

Class GeodeticCoordinate

Class for EPSG:4326 coordinates

Inheritance

System.Object
[Coordinate](#)
[GeoCoordinate](#)
GeodeticCoordinate

Implements

[ICoordinate](#)
System.IEquatable<[ICoordinate](#)>

Inherited Members

[GeoCoordinate.ToNumber\(Int32, Size, Boolean\)](#)
[GeoCoordinate.GetNumbers\(GeoCoordinate, GeoCoordinate, Int32, Size, Boolean\)](#)
[GeoCoordinate.Resolution\(Int32, Size, CoordinateSystem\)](#)
[GeoCoordinate.ZoomForPixelSize\(Int32, Size, CoordinateSystem, Int32, Int32\)](#)
[Coordinate.X](#)
[Coordinate.Y](#)
[Coordinate.DegreesToRadians\(Double\)](#)
[Coordinate.RadiansToDegrees\(Double\)](#)
[Coordinate.Round<T>\(Int32\)](#)
[Coordinate.Round<T>\(T, Int32\)](#)
[Coordinate.Equals\(Object\)](#)
[Coordinate.GetHashCode\(\)](#)
[Coordinate.Equals\(ICoordinate\)](#)
[Coordinate.Add\(Coordinate\)](#)
[Coordinate.Subtract\(Coordinate\)](#)
[Coordinate.Multiply\(Coordinate\)](#)
[Coordinate.Divide\(Coordinate\)](#)
System.Object.Equals(System.Object, System.Object)
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTiff2Tiles.Core.Coordinates](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public class GeodeticCoordinate : GeoCoordinate, ICoordinate, IEquatable<ICoordinate>
```

Constructors

GeodeticCoordinate(Double, Double)

Declaration

```
public GeodeticCoordinate(double longitude, double latitude)
```

Parameters

Type	Name	Description
		X or Longitude
System.Double	longitude	Must be in range [-180.0, 180.0]

Type	Name	Description
		Y or Latitude
System.Double	latitude	Must be in range [-90.0, 90.0]

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Fields

MaxPossibleLatValue

Maximal possible value of latitude for EPSG:4326

Declaration

```
public const double MaxPossibleLatValue = 90
```

Field Value

Type	Description
System.Double	

MaxPossibleLonValue

Maximal possible value of longitude for EPSG:4326

Declaration

```
public const double MaxPossibleLonValue = 180
```

Field Value

Type	Description
System.Double	

MinPossibleLatValue

Minimal possible value of latitude for EPSG:4326

Declaration

```
public const double MinPossibleLatValue = -90
```

Field Value

Type	Description
System.Double	

MinPossibleLonValue

Minimal possible value of longitude for EPSG:4326

Declaration

```
public const double MinPossibleLonValue = -180
```

Field Value

Type	Description
------	-------------

System.Double

Properties

Latitude

Analogue of [Y](#)

Declaration

```
public double Latitude { get; }
```

Property Value

Type	Description
------	-------------

System.Double

Longitude

Analogue of [X](#)

Declaration

```
public double Longitude { get; }
```

Property Value

Type	Description
------	-------------

System.Double

Methods

Resolution(Int32, Size)

Resolution for given zoom level (measured at Equator)

Declaration

```
public static double Resolution(int z, Size tileSize)
```

Parameters

Type	Name	Description
------	------	-------------

System.Int32 z

[Size](#) tileSize

Returns

Type	Description
------	-------------

System.Double Resolution value or -1.0 if something goes wrong

Exceptions

Type	Condition
------	-----------

System.ArgumentOutOfRangeException

System.ArgumentNullException

System.ArgumentException

ToMercatorCoordinate()

Convert current coordinate to [MercatorCoordinate](#)

Declaration

```
public MercatorCoordinate ToMercatorCoordinate()
```

Returns

Type	Description
MercatorCoordinate	Converted MercatorCoordinate

ToPixelCoordinate(Int32, Size)

Convert current [GeoCoordinate](#) to [PixelCoordinate](#)

Declaration

```
public override PixelCoordinate ToPixelCoordinate(int z, Size tileSize)
```

Parameters

Type	Name	Description
System.Int32	z	Zoom
		Must be >= 0
Size	tileSize	ITile 's size Must be square

Returns

Type	Description
PixelCoordinate	Converted PixelCoordinate

Overrides

[GeoCoordinate.ToPixelCoordinate\(Int32, Size\)](#)

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Implements

[ICoordinate](#)
System.IEquatable<T>

Interface ICoordinate

Interface for any coordinate

Inherited Members

System.IEquatable<GTiff2Tiles.Core.Coordinates.ICoordinate>.Equals(GTiff2Tiles.Core.Coordinates.ICoordinate)

Namespace: [GTiff2Tiles.Core.Coordinates](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public interface ICoordinate : IEquatable<ICoordinate>
```

Properties

X

X coordinate value or Longitude

Declaration

```
double X { get; }
```

Property Value

Type	Description
System.Double	

Y

Y coordinate value or Latitude

Declaration

```
double Y { get; }
```

Property Value

Type	Description
System.Double	

Methods

Round<T>(Int32)

Round coordinate's [X](#) and [Y](#)

Declaration

```
T Round<T>(int digits)
    where T : ICoordinate
```

Parameters

Type	Name	Description
System.Int32	digits	Number of digits after zero in return false Must be bigger or equal, than 0

Returns

Type	Description
T	Rounded coordinate

Type Parameters

Name	Description
T	Child of ICoordinate

ToNumber(Int32, Size, Boolean)

Calculate [Number](#) for current [ICoordinate](#)

Declaration

Number ToNumber(int z, Size tileSize, bool tmsCompatible)

Parameters

Type	Name	Description
System.Int32	z	Zoom
		Must be >= 0
Size	tileSize	ITile 's size
System.Boolean tmsCompatible	Is ITile tms compatible?	

Returns

Type	Description
Number Number	in which this ICoordinate belongs

Class MercatorCoordinate

Class for EPSG:3857 coordinates

Inheritance

System.Object
[Coordinate](#)
[GeoCoordinate](#)
MercatorCoordinate

Implements

[ICoordinate](#)
System.IEquatable<[ICoordinate](#)>

Inherited Members

[GeoCoordinate.ToNumber\(Int32, Size, Boolean\)](#)
[GeoCoordinate.GetNumbers\(GeoCoordinate, GeoCoordinate, Int32, Size, Boolean\)](#)
[GeoCoordinate.Resolution\(Int32, Size, CoordinateSystem\)](#)
[GeoCoordinate.ZoomForPixelSize\(Int32, Size, CoordinateSystem, Int32, Int32\)](#)
[Coordinate.X](#)
[Coordinate.Y](#)
[Coordinate.DegreesToRadians\(Double\)](#)
[Coordinate.RadiansToDegrees\(Double\)](#)
[Coordinate.Round<T>\(Int32\)](#)
[Coordinate.Round<T>\(T, Int32\)](#)
[Coordinate.Equals\(Object\)](#)
[Coordinate.GetHashCode\(\)](#)
[Coordinate.Equals\(ICoordinate\)](#)
[Coordinate.Add\(Coordinate\)](#)
[Coordinate.Subtract\(Coordinate\)](#)
[Coordinate.Multiply\(Coordinate\)](#)
[Coordinate.Divide\(Coordinate\)](#)
System.Object.Equals(System.Object, System.Object)
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTiff2Tiles.Core.Coordinates](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public class MercatorCoordinate : GeoCoordinate, ICoordinate, IEquatable<ICoordinate>
```

Constructors

MercatorCoordinate(Double, Double)

Declaration

```
public MercatorCoordinate(double longitude, double latitude)
```

Parameters

Type	Name	Description
		X or Longitude
System.Double	longitude	Must be in range [-20026376.39, 20026376.39]

Type	Name	Description
System.Double	latitude	Y or Latitude Must be in range [-20048966.10, 20048966.10]

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Fields

MaxPossibleLatValue

Maximal possible value of latitude for EPSG:3857

Declaration

```
public const double MaxPossibleLatValue = 20048966.1
```

Field Value

Type	Description
System.Double	

MaxPossibleLonValue

Maximal possible value of longitude for EPSG:3857

Declaration

```
public const double MaxPossibleLonValue = 20037508.35
```

Field Value

Type	Description
System.Double	

MinPossibleLatValue

Minimal possible value of latitude for EPSG:3857

Declaration

```
public const double MinPossibleLatValue = -20048966.1
```

Field Value

Type	Description
System.Double	

MinPossibleLonValue

Minimal possible value of longitude for EPSG:3857

Declaration

```
public const double MinPossibleLonValue = -20037508.35
```

Field Value

Type	Description
System.Double	

Methods

Resolution(Int32, Size)

Resolution for given zoom level (measured at Equator)

Declaration

```
public static double Resolution(int z, Size tileSize)
```

Parameters

Type	Name	Description
System.Int32	z	
Size	tileSize	

Returns

Type	Description
System.Double	Resolution value or -1.0 if something goes wrong

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	
System.ArgumentNullException	
System.ArgumentException	

ToGeodeticCoordinate()

Convert current coordinate to [GeodeticCoordinate](#)

Declaration

```
public GeodeticCoordinate ToGeodeticCoordinate()
```

Returns

Type	Description
GeodeticCoordinate	Converted GeodeticCoordinate

ToPixelCoordinate(Int32, Size)

Convert current [GeoCoordinate](#) to [PixelCoordinate](#)

Declaration

```
public override PixelCoordinate ToPixelCoordinate(int z, Size tileSize)
```

Parameters

Type	Name	Description
------	------	-------------

Type	Name	Description
System.Int32	z	Zoom Must be ≥ 0

Size	tileSize	ITile 's size Must be square
----------------------	----------	---

Returns

Type	Description
PixelCoordinate	Converted PixelCoordinate

Overrides

[GeoCoordinate.ToPixelCoordinate\(Int32, Size\)](#)

Implements

[ICoordinate](#)
System.IEquatable<T>

Class PixelCoordinate

Coordinates in pixels

Inheritance

System.Object
[Coordinate](#)
PixelCoordinate

Implements

[ICoordinate](#)
System.IEquatable<[ICoordinate](#)>

Inherited Members

[Coordinate.X](#)
[Coordinate.Y](#)
[Coordinate.DegreesToRadians\(Double\)](#)
[Coordinate.RadiansToDegrees\(Double\)](#)
[Coordinate.Round<T>\(Int32\)](#)
[Coordinate.Round<T>\(T, Int32\)](#)
[Coordinate.Equals\(Object\)](#)
[Coordinate.GetHashCode\(\)](#)
[Coordinate.Equals\(ICoordinate\)](#)
[Coordinate.Add\(Coordinate\)](#)
[Coordinate.Subtract\(Coordinate\)](#)
[Coordinate.Multiply\(Coordinate\)](#)
[Coordinate.Divide\(Coordinate\)](#)
System.Object.Equals(System.Object, System.Object)
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [G TIFF2 Tiles.Core.Coordinates](#)

Assembly: [G TIFF2 Tiles.Core.dll](#)

Syntax

```
public class PixelCoordinate : Coordinate, ICoordinate, IEquatable<ICoordinate>
```

Constructors

PixelCoordinate(Double, Double)

Create instance of class

Declaration

```
public PixelCoordinate(double x, double y)
```

Parameters

Type	Name	Description
System.Double x		X coordinate value
		Must be >= 0
System.Double y		Y coordinate value
		Must be >= 0

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Methods

ToGeoCoordinate(CoordinateSystem, CoordinateSystem, Int32, Size)

Convert current coordinate to child of [GeoCoordinate](#)

Declaration

```
public GeoCoordinate ToGeoCoordinate(CoordinateSystem inputCoordinateSystem, CoordinateSystem targetCoordinateSystem, int z, Size tileSize)
```


Parameters

Type	Name	Description
CoordinateSystem	inputCoordinateSystem	CoordinateSystem from which pixel coordinates were maid
CoordinateSystem	targetCoordinateSystem	Coordinate system
System.Int32	z	Zoom Must be >= 0
Size	tileSize	ITile 's size Must be square

Returns

Type	Description
GeoCoordinate	Converted to GeoCoordinate value or null if something goes wrong

Exceptions

Type	Condition
System.NotSupportedException	

ToGeodeticCoordinate(CoordinateSystem, Int32, Size)

Convert current coordinate to [GeodeticCoordinate](#)

Declaration

```
public GeodeticCoordinate ToGeodeticCoordinate(CoordinateSystem inputCoordinateSystem, int z, Size tileSize)
```

Parameters

Type	Name	Description
CoordinateSystem	inputCoordinateSystem	CoordinateSystem from which pixel coordinates were maid
System.Int32	z	Zoom Must be >= 0
Size	tileSize	ITile 's size Must be square

Returns

Type	Description
GeodeticCoordinate	Converted GeodeticCoordinate

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	
System.NotSupportedException	

ToMercatorCoordinate(CoordinateSystem, Int32, Size)

Convert current coordinate to [MercatorCoordinate](#)

Declaration

```
public MercatorCoordinate ToMercatorCoordinate(CoordinateSystem inputCoordinateSystem, int z, Size tileSize)
```

Parameters

Type	Name	Description
------	------	-------------

Type	Name	Description
CoordinateSystem	inputCoordinateSystem	CoordinateSystem from which pixel coordinates were maid
System.Int32	z	Zoom Must be >= 0
Size	tileSize	ITile 's size Must be square

Returns

Type	Description
MercatorCoordinate	Converted MercatorCoordinate

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	
System.NotSupportedException	

ToNumber(Int32, Size, Boolean)

Calculate [Number](#) for current [ICoordinate](#)

Declaration

```
public override Number ToNumber(int z, Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
System.Int32	z	
Size	tileSize	ITile 's size Must be square
System.Boolean	tmsCompatible	

Returns

Type	Description
Number	Number in which this ICoordinate belongs

Overrides

[Coordinate.ToNumber\(Int32, Size, Boolean\)](#)

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	
System.ArgumentNullException	
System.ArgumentException	

ToRasterPixelCoordinate(Int32, Size)

Move the origin of pixel coordinates to top-left corner

Declaration

```
public PixelCoordinate ToRasterPixelCoordinate(int z, Size tileSize)
```

Parameters

Type	Name	Description
------	------	-------------

Type	Name	Description
System.Int32 z		Zoom
		Must be ≥ 0

Size		ITile 's size
	tileSize	Must be square

Returns

Type	Description
PixelCoordinate	Converted PixelCoordinate

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	
System.ArgumentNullException	
System.ArgumentException	

Implements

[ICoordinate](#)
System.IEquatable<T>

Namespace GTiff2Tiles.Core.Enums

Enums

[CoordinateSystem](#)

Supported EPSG coordinate systems

[Interpolation](#)

Represents the interpolation algorithms

[TileExtension](#)

Extensions of ready tiles

Enum CoordinateSystem

Supported EPSG coordinate systems

Namespace: [GTiff2Tiles.Core.Enums](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public enum CoordinateSystem
```

Fields

Name	Description
Epsg102100	Replaced by Epsg3857
Epsg102113	Replaced by Epsg3857
Epsg3587	Replaced by Epsg3857
Epsg3785	Replaced by Epsg3857
Epsg3857	EPSG:3857
Epsg41001	Replaced by Epsg3857
Epsg4326	EPSG:4326
Epsg54004	Replaced by Epsg3857
Epsg900913	Replaced by Epsg3857
Other	Other or unknown coordinate system

Enum Interpolation

Represents the interpolation algorithms

Namespace: [GTiff2Tiles.Core.Enums](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public enum Interpolation
```

Fields

Name	Description
Cubic	Cubic interpolation
Lanczos2	Two-lobe Lanczos
Lanczos3	Three-lobe Lanczos
Linear	Linear interpolation
Mitchell	Mitchell
Nearest	Nearest-neighbour interpolation

Enum TileExtension

Extensions of ready tiles

Namespace: [GTiff2Tiles.Core.Enums](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public enum TileExtension
```

Fields

Name	Description
------	-------------

Jpg	.jpg
-----	------

Png	.png
-----	------

Webp	.webp
------	-------

Namespace GTiff2Tiles.Core.Exceptions

Classes

[DirectoryException](#)

[FileException](#)

[RasterException](#)

Class DirectoryException

Inheritance

System.Object
System.Exception
DirectoryException

Implements

System.Runtime.Serialization.ISerializable

Inherited Members

System.Exception.GetBaseException()
System.Exception.GetObjectData(System.Runtime.Serialization.SerializationInfo, System.Runtime.Serialization.StreamingContext)
System.Exception.GetType()
System.Exception.ToString()
System.Exception.Data
System.Exception.HelpLink
System.Exception.HResult
System.Exception.InnerException
System.Exception.Message
System.Exception.Source
System.Exception.StackTrace
System.Exception.TargetSite
System.Exception.SerializeObjectState
System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)

Namespace: [G.Tiff2Tiles.Core.Exceptions](#)

Assembly: G.Tiff2Tiles.Core.dll

Syntax

```
public sealed class DirectoryException : Exception, ISerializable
```

Constructors

DirectoryException()

Declaration

```
public DirectoryException()
```

DirectoryException(String)

Declaration

```
public DirectoryException(string message)
```

Parameters

Type	Name	Description
System.String	message	

DirectoryException(String, Exception)

Declaration

```
public DirectoryException(string message, Exception innerException)
```

Parameters

Type	Name	Description
System.String	message	
System.Exception	innerException	

Implements

System.Runtime.Serialization.ISerializable

Class FileNotFoundException

Inheritance

System.Object
System.Exception
FileNotFoundException

Implements

System.Runtime.Serialization.ISerializable

Inherited Members

System.Exception.GetBaseException()
System.Exception.GetObjectData(System.Runtime.Serialization.SerializationInfo, System.Runtime.Serialization.StreamingContext)
System.Exception.GetType()
System.Exception.ToString()
System.Exception.Data
System.Exception.HelpLink
System.Exception.HResult
System.Exception.InnerException
System.Exception.Message
System.Exception.Source
System.Exception.StackTrace
System.Exception.TargetSite
System.Exception.SerializeObjectState
System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)

Namespace: [G.Tiff2Tiles.Core.Exceptions](#)

Assembly: G.Tiff2Tiles.Core.dll

Syntax

```
public sealed class FileNotFoundException : Exception, ISerializable
```

Constructors

FileNotFoundException()

Declaration

```
public FileNotFoundException()
```

FileNotFoundException(String)

Declaration

```
public FileNotFoundException(string message)
```

Parameters

Type	Name	Description
System.String	message	

FileNotFoundException(String, Exception)

Declaration

```
public FileNotFoundException(string message, Exception innerException)
```

Parameters

Type	Name	Description
System.String	message	
System.Exception	innerException	

Implements

System.Runtime.Serialization.ISerializable

Class RasterException

Inheritance

System.Object
System.Exception
RasterException

Implements

System.Runtime.Serialization.ISerializable

Inherited Members

System.Exception.GetBaseException()
System.Exception.GetObjectData(System.Runtime.Serialization.SerializationInfo, System.Runtime.Serialization.StreamingContext)
System.Exception.GetType()
System.Exception.ToString()
System.Exception.Data
System.Exception.HelpLink
System.Exception.HResult
System.Exception.InnerException
System.Exception.Message
System.Exception.Source
System.Exception.StackTrace
System.Exception.TargetSite
System.Exception.SerializeObjectState
System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)

Namespace: [GTiff2Tiles.Core.Exceptions](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public sealed class RasterException : Exception, ISerializable
```

Constructors

RasterException()

Declaration

```
public RasterException()
```

RasterException(String)

Declaration

```
public RasterException(string message)
```

Parameters

Type	Name	Description
System.String	message	

RasterException(String, Exception)

Declaration

```
public RasterException(string message, Exception innerException)
```

Parameters

Type	Name	Description
System.String	message	
System.Exception	innerException	

Implements

System.Runtime.Serialization.ISerializable

Namespace GTiff2Tiles.Core.GeoTiffs

Classes

[Raster](#)

Class, representing [Raster](#) GeoTiff. Used for creating [RasterTiles](#)

Interfaces

[IGeoTiff](#)

Main interface for different type of GeoTiffs and [ITile](#)

Interface IGeoTiff

Main interface for different type of GeoTiffs and [ITile](#)

Inherited Members

System.IAsyncDisposable.DisposeAsync()
System.IDisposable.Dispose()

Namespace: [GTiff2Tiles.Core.GeoTiffs](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public interface IGeoTiff : IAsyncDisposable, IDisposable
```

Properties

GeoCoordinateSystem

Type of desired [CoordinateSystem](#)

Declaration

```
CoordinateSystem GeoCoordinateSystem { get; }
```

Property Value

Type	Description
CoordinateSystem	

IsDisposed

Shows if resources have already been disposed

Declaration

```
bool IsDisposed { get; }
```

Property Value

Type	Description
System.Boolean	

MaxCoordinate

Maximal [GeoCoordinate](#) of this [IGeoTiff](#)

Declaration

```
GeoCoordinate MaxCoordinate { get; }
```

Property Value

Type	Description
GeoCoordinate	

MinCoordinate

Minimal [GeoCoordinate](#) of this [IGeoTiff](#)

Declaration


```
GeoCoordinate MinCoordinate { get; }
```

Property Value

Type	Description
GeoCoordinate	

Size

Image's [Size](#) (width and height)

Declaration

```
Size Size { get; }
```

Property Value

Type	Description
Size	

Class Raster

Class, representing [Raster](#) GeoTiff. Used for creating [RasterTiles](#)

Inheritance

System.Object
Raster

Implements

[IGeoTiff](#)
System.IAsyncDisposable
System.IDisposable

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTile2Tiles.Core.GeoTiffs](#)

Assembly: [GTile2Tiles.Core.dll](#)

Syntax

```
public class Raster : IGeoTiff, IAsyncDisposable, IDisposable
```

Constructors

Raster(Stream, CoordinateSystem)

Declaration

```
public Raster(Stream inputStream, CoordinateSystem coordinateSystem)
```

Parameters

Type	Name	Description
System.IO.Stream	inputStream	System.IO.Stream with GeoTiff
CoordinateSystem	coordinateSystem	

Raster(String, CoordinateSystem, Int64)

Creates new [Raster](#) object

Declaration

```
public Raster(string inputFilePath, CoordinateSystem coordinateSystem, long maxMemoryCache = 2147483648L)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path
		Must have .tif extension
CoordinateSystem	coordinateSystem	GeoTiff's coordinate system
		If set to Other throws System.ArgumentOutOfRangeException
System.Int64	maxMemoryCache	Max size of input image to store in RAM Must be > 0. 2GB by default

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	
System.NotSupportedException	

Raster(String, Int64)

Creates new [Raster](#) object

Use this version ONLY if you don't know the [CoordinateSystem](#) of this [Raster](#). In other cases, prefer using other constructors!

Declaration

```
public Raster(string inputFilePath, long maxMemoryCache = 2147483648L)
```

Parameters

Type	Name	Description
System.String	inputFilePath	
System.Int64	maxMemoryCache	

Properties

Data

This [Raster](#)'s data

Declaration

```
public Image Data { get; }
```

Property Value

Type	Description
NetVips.Image	

GeoCoordinateSystem

Type of desired [CoordinateSystem](#)

Declaration

```
public CoordinateSystem GeoCoordinateSystem { get; }
```

Property Value

Type	Description
CoordinateSystem	

IsDisposed

Shows if resources have already been disposed

Declaration

```
public bool IsDisposed { get; }
```

Property Value

Type	Description
System.Boolean	

MaxCoordinate

Maximal [GeoCoordinate](#) of this [IGeoTiff](#)

Declaration

```
public GeoCoordinate MaxCoordinate { get; }
```

Property Value

Type	Description
GeoCoordinate	

MinCoordinate

Minimal [GeoCoordinate](#) of this [IGeoTiff](#)

Declaration

```
public GeoCoordinate MinCoordinate { get; }
```

Property Value

Type	Description
GeoCoordinate	

Size

Image's [Size](#) (width and height)

Declaration

```
public Size Size { get; }
```

Property Value

Type	Description
Size	

Methods

CreateTileImage(Image, RasterTile)

Create NetVips.Image for one [RasterTile](#) from input NetVips.Image or tile cache

Declaration

```
public Image CreateTileImage(Image tileCache, RasterTile tile)
```

Parameters

Type	Name	Description
NetVips.Image	tileCache	Source NetVips.Image or tile cache
RasterTile	tile	Target RasterTile

Returns

Type	Description
NetVips.Image	Ready NetVips.Image for RasterTile

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

Dispose()

Declaration

public void Dispose()

Dispose(Boolean)

Declaration

protected virtual void Dispose(bool disposing)

Parameters

Type	Name	Description
System.Boolean	disposing	Dispose static fields?

DisposeAsync()

Declaration

public ValueTask DisposeAsync()

Returns

Type	Description
System.Threading.Tasks.ValueTask	

Finalize()

Calls [Dispose\(Boolean\)](#) on this [Raster](#)

Declaration

protected void Finalize()

WriteTilesToDirectory(String, Int32, Int32, Boolean, Size, TileExtension, Interpolation, Int32, Int32, Int32, IProgress<Double>, Action<String>)

Crops current [RasterTile](#) on [RasterTiles](#) and writes them to outputDirectoryPath

Declaration

public void WriteTilesToDirectory(string outputDirectoryPath, int minZ, int maxZ, bool tmsCompatible = false, Size tileSize = null, TileExtension tileExtension = TileExtension.Png

Parameters

Type	Name	Description
System.String	outputDirectoryPath	Directory for output RasterTiles
System.Int32	minZ	
System.Int32	maxZ	
System.Boolean	tmsCompatible	
Size	tileSize	
TileExtension	tileExtension	Extension of ready RasterTiles .png by default
Interpolation	interpolation	
System.Int32	bandsCount	
System.Int32	tileCacheCount	
System.Int32	threadsCount	T
System.IProgress<System.Double>	progress	
System.Action<System.String>	printTimeAction	

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	
RasterException	

WriteTileToChannel(Image, RasterTile, ChannelWriter<RasterTile>)

Gets data from source NetVips.Image or tile cache for specified [RasterTile](#) and writes it to System.Threading.Channels.ChannelWriter<T>

Declaration

public bool WriteTileToChannel(Image tileCache, RasterTile tile, ChannelWriter<RasterTile> channelWriter)

Parameters

Type	Name	Description
NetVips.Image	tileCache	Source NetVips.Image or tile cache
RasterTile	tile	Target RasterTile

System.Threading.Channels.ChannelWriter<[RasterTile](#)> channelWriter Target System.Threading.Channels.ChannelWriter<T>

Returns

Type	Description
System.Boolean	true if RasterTile was written; false otherwise

Exceptions

Type	Condition
System.ArgumentNullException	

WriteTileToChannelAsync(Image, RasterTile, ChannelWriter<RasterTile>)

Gets data from source NetVips.Image or tile cache for specified [RasterTile](#) and writes it to System.Threading.Channels.ChannelWriter<T>

Declaration

```
public ValueTask WriteTileToChannelAsync(Image tileCache, RasterTile tile, ChannelWriter<RasterTile> channelWriter)
```

Parameters

Type	Name	Description
NetVips.Image	tileCache	Source NetVips.Image or tile cache
RasterTile	tile	Target RasterTile

System.Threading.Channels.ChannelWriter<[RasterTile](#)> channelWriter Target System.Threading.Channels.ChannelWriter<T>

Returns

Type	Description
System.Threading.Tasks.ValueTask	

Exceptions

Type	Condition
System.ArgumentNullException	

WriteTileToEnumerable(Image, RasterTile)

Gets data from source NetVips.Image or tile cache for specified [RasterTile](#) and writes it to System.Collections.Generic.IEnumerable<T>

Declaration

```
public IEnumerable<byte> WriteTileToEnumerable(Image tileCache, RasterTile tile)
```

Parameters

Type	Name	Description
NetVips.Image	tileCache	Source NetVips.Image or tile cache
RasterTile	tile	Target RasterTile

Returns

Type	Description
System.Collections.Generic.IEnumerable<System.Byte>	RasterTile 's System.Bytes

WriteTileToFile(Image, RasterTile)

Gets data from source NetVips.Image or tile cache for specified [RasterTile](#) and writes it to ready file

Declaration

```
public void WriteTileToFile(Image tileCache, RasterTile tile)
```

Parameters

Type	Name	Description
NetVips.Image	tileCache	Source NetVips.Image or tile cache
RasterTile	tile	Target RasterTile Path should not be null or whitespace

Exceptions

Type	Condition
System.ArgumentNullException	

WriteTileToFileAsync(Image, RasterTile)

Gets data from source NetVips.Image or tile cache for specified [RasterTile](#) and writes it to ready file

Declaration

```
public Task WriteTileToFileAsync(Image tileCache, RasterTile tile)
```

Parameters

Type	Name	Description
NetVips.Image	tileCache Source	NetVips.Image or tile cache

[RasterTile](#) tile Target [RasterTile](#)
[Path](#) should not be null or whitespace

Returns

Type	Description
System.Threading.Tasks.Task	

Exceptions

Type	Condition
System.ArgumentNullException	

Implements

[IGeoTiff](#)
System.IAsyncDisposable
System.IDisposable

Namespace GTiff2Tiles.Core.Helpers

Classes

[CheckHelper](#)

Class with static methods to check for errors

[NetVipsHelper](#)

Some additional methods for NetVips

[ProgressHelper](#)

Class with methods to simplify progress-reporting

Class CheckHelper

Class with static methods to check for errors

Inheritance

System.Object
CheckHelper

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [G:Tiff2Tiles.Core.Helpers](#)

Assembly: G:Tiff2Tiles.Core.dll

Syntax

```
public static class CheckHelper
```

Methods

CheckDirectory(String, Nullable<Boolean>)

Checks, if directory's path is not empty, creates directory if it doesn't exist and checks if it's empty or not

Declaration

```
public static void CheckDirectory(string directoryPath, bool? shouldBeEmpty = default(bool? ))
```

Parameters

Type	Name	Description
System.String	directoryPath	Directory's path to check
System.Nullable<System.Boolean>	shouldBeEmpty	Should directory be empty? If set , emptyness doesn't check

Exceptions

Type	Condition
System.ArgumentNullException	
DirectoryException	

CheckFile(String, Nullable<Boolean>, String)

Checks, if file's path is not empty string and file exists, if it should

Declaration

```
public static void CheckFile(string filePath, bool? shouldExist, string fileExtension = null)
```

Parameters

Type	Name	Description
System.String	filePath	File's path to check
		Should the file exist?
System.Nullable<System.Boolean>	shouldExist	true by default; set this to null if you don't know or care if file's already exists
System.String	fileExtension	Checks file extension If set to , extension doesn't check

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	
System.IO.FileNotFoundException	
FileException	

CheckInputFileAsync(String, CoordinateSystem)

Checks the existence, projection and type

Declaration

```
public static ValueTask<bool> CheckInputFileAsync(string inputFilePath, CoordinateSystem targetSystem)
```

Parameters

Type	Name	Description
System.String	inputFilePath	Input GeoTiff's path
CoordinateSystem	targetSystem	Target coordinate system

Returns

Type	Description
System.Threading.Tasks.ValueTask<System.Boolean>	true if file needs to be converted; false otherwise

Class NetVipsHelper

Some additional methods for NetVips

Inheritance

System.Object
NetVipsHelper

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [G:Tiff2Tiles.Core.Helpers](#)

Assembly: G:Tiff2Tiles.Core.dll

Syntax

```
public static class NetVipsHelper
```

Methods

DisableLog()

Disables NetVips log warnings

Declaration

```
public static void DisableLog()
```

Class ProgressHelper

Class with methods to simplify progress-reporting

Inheritance

System.Object
ProgressHelper

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [G TIFF2 Tiles.Core.Helpers](#)

Assembly: G TIFF2 Tiles.Core.dll

Syntax

```
public static class ProgressHelper
```

Methods

GetEstimatedTimeLeft(Double, Stopwatch)

Calculate estimated time left, based on your current progress and time from start

Declaration

```
public static TimeSpan GetEstimatedTimeLeft(double percentage, Stopwatch stopwatch)
```

Parameters

Type	Name	Description
System.Double	percentage	Current progress; Should be in range (0.0, 100.0]

System.Diagnostics.Stopwatch stopwatch Time passed from the start

Returns

Type	Description
System.TimeSpan	Estimated System.TimeSpan left

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentOutOfRangeException	

PrintEstimatedTimeLeft(Double, Stopwatch, Action<String>)

Prints estimated time left

Declaration

```
public static void PrintEstimatedTimeLeft(double percentage, Stopwatch stopwatch = null, Action<string> reporter = null)
```

Parameters

Type	Name	Description
System.Double	percentage	Current progress; Should be in range (0.0, 100.0]
System.Diagnostics.Stopwatch	stopwatch	Time passed from the start; If set to null no time printed
System.Action<System.String>	reporter	Delegate to work with reported string E.g. System.Console.WriteLine(System.String); if set to null no time printed

Namespace GTiff2Tiles.Core.Images

Classes

[Area](#)

Represents read/write [Areas](#) of image

[Band](#)

Represents image's band

[Size](#)

[Size](#) of any image

Class Area

Represents read/write [Areas](#) of image

Inheritance

System.Object
Area

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [Gtiff2Tiles.Core.Images](#)

Assembly: Gtiff2Tiles.Core.dll

Syntax

public class Area

Constructors

Area(PixelCoordinate, Size)

Creates new [Area](#)

Declaration

public Area(PixelCoordinate originCoordinate, Size size)

Parameters

Type	Name	Description
PixelCoordinate	originCoordinate	OriginCoordinate
Size	size	Size

Exceptions

Type	Condition
System.ArgumentNullException	

Properties

OriginCoordinate

Origin [PixelCoordinate](#)

Declaration

public PixelCoordinate OriginCoordinate { get; }

Property Value

Type	Description
PixelCoordinate	

Size

[Size](#) of [Area](#)

Declaration

public Size Size { get; }

Property Value

Type	Description
Size	

Methods

GetAreas(GeoCoordinate, GeoCoordinate, Size, GeoCoordinate, GeoCoordinate, Size)

Get [Areas](#) to read from input [IGeoTiff](#) and to write to target [ITile](#)

Declaration

public static (Area readArea, Area writeArea) GetAreas(GeoCoordinate imageMinCoordinate, GeoCoordinate imageMaxCoordinate, Size imageSize, GeoCoordinate tileMinCoordinate, GeoCoo:

Parameters

Type	Name	Description
GeoCoordinate	imageMinCoordinate	Minimal GeoCoordinate of IGeoTiff
GeoCoordinate	imageMaxCoordinate	Maximal GeoCoordinate of IGeoTiff
Size	imageSize	Size of IGeoTiff
GeoCoordinate	tileMinCoordinate	Minimal GeoCoordinate of ITile
GeoCoordinate	tileMaxCoordinate	Maximal GeoCoordinate of ITile

Type	Name	Description
Size	tileSize	Size of ITile

Returns

Type	Description
System.ValueTuple< Area , Area >	

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

GetAreas(IGeoTiff, ITile)

Get [Areas](#) to read from input [IGeoTiff](#) and to write to target [ITile](#).

Declaration

```
public static (Area readArea, Area writeArea) GetAreas(IGeoTiff image, ITile tile)
```

Parameters

Type	Name	Description
IGeoTiff image	Source IGeoTiff	
ITile tile	Target ITile	

Returns

Type	Description
System.ValueTuple< Area , Area >	System.ValueTuple`2 of Areas to read and write

Exceptions

Type	Condition
System.ArgumentNullException	

Class Band

Represents image's band

Inheritance

System.Object
Band

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTiff2Tiles.Core.Images](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public class Band
```

Constructors

Band(Int32)

Creates new [Band](#)

Declaration

```
public Band(int value = 255)
```

Parameters

Type	Name	Description
System.Int32	value	System.Int32 in range from 0 to 255

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Fields

DefaultValue

Default [Band](#) value

Declaration

```
public const int DefaultValue = 255
```

Field Value

Type	Description
System.Int32	

Properties

Value

Current value

Declaration

```
public int Value { get; }
```

Property Value

Type	Description
System.Int32	

Methods

AddBands(ref Image, IEnumerable<Band>)

Add [Bands](#) to NetVips.Image

Declaration

```
public static void AddBands(ref Image image, IEnumerable<Band> bands)
```

Parameters

Type	Name	Description
NetVips.Image	image	Reference on NetVips.Image to add Bands to
System.Collections.Generic.IEnumerable< Band >	bands	Collection of Bands to add

Exceptions

Type	Condition
System.ArgumentNullException	

AddDefaultBands(ref Image, Int32)

Add default [Bands](#) to NetVips.Image until bands count is lesser than NetVips.Image's current bands count

Declaration

```
public static void AddDefaultBands(ref Image image, int bandsCount)
```

Parameters

Type	Name	Description
NetVips.Image	image	Reference on NetVips.Image to add Bands to
System.Int32	bandsCount	Count of desired Bands in NetVips.Image; NOT the count of Bands to add

Exceptions

Type	Condition
------	-----------

Type	Condition
System.ArgumentNullException	

Class Size

[Size](#) of any image

Inheritance

System.Object
Size

Implements

System.IEquatable<[Size](#)>

Inherited Members

System.Object.Equals(System.Object, System.Object)
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [G.Tiff2Tiles.Core.Images](#)

Assembly: G.Tiff2Tiles.Core.dll

Syntax

```
public sealed class Size : IEquatable<Size>
```

Constructors

Size(Int32, Int32)

Creates new [Size](#)

Declaration

```
public Size(int width, int height)
```

Parameters

Type	Name	Description
System.Int32	width	Width Should be > 0
System.Int32	height	Height Should be > 0

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Properties

Height

Image's height

Declaration

```
public int Height { get; }
```

Property Value

Type	Description
System.Int32	

IsSquare

Shows if this tile is square (width == height)

Declaration

```
public bool IsSquare { get; }
```

Property Value

Type	Description
System.Boolean	

Resolution

Image's resolution

Declaration

```
public int Resolution { get; }
```

Property Value

Type	Description
System.Int32	

Width

Image's width

Declaration

```
public int Width { get; }
```

Property Value

Type	Description
System.Int32	

Methods

Add(Size)

Sum [Sizes](#)

Declaration

```
public Size Add(Size other)
```

Parameters

Type	Name	Description
------	------	-------------

[Size](#) other [Size](#) to add

Returns

Type Description

[Size](#) New [Size](#)

Exceptions

Type	Condition
System.ArgumentNullException	

Divide(Size)

Divide [Size](#)s

Declaration

```
public Size Divide(Size other)
```

Parameters

Type Name Description

[Size](#) other [Size](#) to divide on

Returns

Type Description

[Size](#) New [Size](#)

Exceptions

Type	Condition
System.ArgumentNullException	

Equals(Size)

Declaration

```
public bool Equals(Size other)
```

Parameters

Type Name Description

[Size](#) other

Returns

Type	Description
System.Boolean	

Equals(Object)

Declaration

```
public override bool Equals(object obj)
```

Parameters

Type	Name	Description
System.Object	obj	

Returns

Type	Description
System.Boolean	

Overrides

System.Object.Equals(System.Object)

GetHashCode()

Declaration

```
public override int GetHashCode()
```

Returns

Type	Description
System.Int32	

Overrides

System.Object.GetHashCode()

Multiply(Size)

Multiply [Sizes](#)

Declaration

```
public Size Multiply(Size other)
```

Parameters

Type	Name	Description
Size	other	Size to multiply

Returns

Type Description

[Size](#) New [Size](#)

Exceptions

Type	Condition
System.ArgumentNullException	

Subtract(Size)

Subtract [Sizes](#)

Declaration

```
public Size Subtract(Size other)
```

Parameters

Type Name Description

[Size](#) other [Size](#) to subtract

Returns

Type Description

[Size](#) New [Size](#)

Exceptions

Type	Condition
System.ArgumentNullException	

Operators

Addition(Size, Size)

Sum [Sizes](#)

Declaration

```
public static Size operator +(Size size1, Size size2)
```

Parameters

Type Name Description

[Size](#) size1 [Size](#) 1

[Size](#) size2 [Size](#) 2

Returns

Type Description

[Size](#) New [Size](#)

Exceptions

Type	Condition
System.ArgumentNullException	

Division(Size, Size)

Divide [Sizes](#)

Declaration

```
public static Size operator /(Size size1, Size size2)
```

Parameters

Type Name Description

[Size](#) size1 [Size](#) 1

Type Name Description

[Size](#) size2 [Size](#) 2

Returns

Type Description

[Size](#) New [Size](#)

Exceptions

Type	Condition
System.ArgumentNullException	

Equality(Size, Size)

Check two [Sizes](#) for equality

Declaration

```
public static bool operator ==(Size size1, Size size2)
```

Parameters

Type Name Description

[Size](#) size1 [Size](#) 1

[Size](#) size2 [Size](#) 2

Returns

Type	Description
System.Boolean	true if Sizes are equal; false otherwise

Inequality(Size, Size)

Check two [Sizes](#) for non-equality

Declaration

```
public static bool operator !=(Size size1, Size size2)
```

Parameters

Type Name Description

[Size](#) size1 [Size](#) 1

[Size](#) size2 [Size](#) 2

Returns

Type	Description
------	-------------

Type	Description
System.Boolean	true if Sizes are not equal; false otherwise

Multiply(Size, Size)

Multiply [Sizes](#)

Declaration

```
public static Size operator *(Size size1, Size size2)
```

Parameters

Type Name Description

[Size](#) size1 [Size](#) 1

[Size](#) size2 [Size](#) 2

Returns

Type Description

[Size](#) New [Size](#)

Exceptions

Type	Condition
System.ArgumentNullException	

Subtraction(Size, Size)

Subtract [Sizes](#)

Declaration

```
public static Size operator -(Size size1, Size size2)
```

Parameters

Type Name Description

[Size](#) size1 [Size](#) 1

[Size](#) size2 [Size](#) 2

Returns

Type Description

[Size](#) New [Size](#)

Exceptions

Type	Condition
------	-----------

Type	Condition
System.ArgumentNullException	

Implements

System.IEquatable<T>

Namespace GTiff2Tiles.Core.Tiles

Classes

[Number](#)

[Number](#) of [ITile](#)

[RasterTile](#)

[Raster Tile](#)

[Tile](#)

Basic implementation of [ITile](#) interface

Interfaces

[ITile](#)

Interface for all tiles

Interface ITile

Interface for all tiles

Inherited Members

System.IDisposable.Dispose()
System.IAsyncDisposable.DisposeAsync()

Namespace: [GTiff2Tiles.Core.Tiles](#)

Assembly: GTiff2Tiles.Core.dll

Syntax

```
public interface ITile : IDisposable, IAsyncDisposable
```

Properties

Bytes

Collection of [ITile](#)'s bytes

Declaration

```
IEnumerable<byte> Bytes { get; set; }
```

Property Value

Type	Description
System.Collections.Generic.IEnumerable<System.Byte>	

Extension

Extension of [ITile](#)

Declaration

```
TileExtension Extension { get; }
```

Property Value

Type	Description
TileExtension	

IsDisposed

Shows if this [ITile](#)'s already disposed

Declaration

```
bool IsDisposed { get; }
```

Property Value

Type	Description
System.Boolean	

MaxCoordinate

Maximal [GeoCoordinate](#) of this [ITile](#)

Declaration

```
GeoCoordinate MaxCoordinate { get; }
```

Property Value

Type	Description
GeoCoordinate	

MinCoordinate

Minimal [GeoCoordinate](#) of this [ITile](#)

Declaration

```
GeoCoordinate MinCoordinate { get; }
```

Property Value

Type	Description
GeoCoordinate	

MinimalBytesCount

[ITiles](#) with [Bytes](#) count lesser than this value won't pass [Validate\(Boolean\)](#) check

Declaration

```
int MinimalBytesCount { get; set; }
```

Property Value

Type	Description
System.Int32	

Number

[Number](#) of this [ITile](#)

Declaration

```
Number Number { get; }
```

Property Value

Type	Description
Number	

Path

Path on disk of this [ITile](#)

Declaration

```
string Path { get; set; }
```

Property Value

Type	Description
System.String	

Size

[Size](#) (width and height) of this [ITile](#)

Declaration

```
Size Size { get; }
```

Property Value

Type Description

[Size](#)

TmsCompatible

Is [ITile](#) tms compatible?

Declaration

```
bool TmsCompatible { get; }
```

Property Value

Type	Description
System.Boolean	

Methods

CalculatePosition()

Calculates this [ITile](#)'s position in upper [ITile](#)

Declaration

```
int CalculatePosition()
```

Returns

Type	Description
System.Int32	Value in range from 0 to 3
	Starts always from upper-left corner and goes to lower-right, but maths depends on TmsCompatible value

GetExtensionString()

Get System.String from [TileExtension](#)

Declaration

```
string GetExtensionString()
```

Returns

Type	Description
System.String	Converted System.String

Validate(Boolean)

Checks if this [ITile](#) is not empty or too small

See [MinimalBytesCount](#) property for more info

Declaration

```
bool Validate(bool isCheckPath)
```

Parameters

Type	Name	Description
System.Boolean	isCheckPath	Do you want to check Path ?

Returns

Type	Description
System.Boolean	true if ITile 's valid; false otherwise

WriteToFile(String)

Writes [ITile](#)'s [Bytes](#) to file

Declaration

```
void WriteToFile(string path = null)
```

Parameters

Type	Name	Description
System.String	path	Full path to write ITile if not set, Path property will be used instead

Class Number

Number of [ITile](#)

Inheritance

System.Object
Number

Implements

System.IEquatable<[Number](#)>

Inherited Members

System.Object.Equals(System.Object, System.Object)
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTH02.Tiles.Core.Tiles](#)

Assembly: GTH02.Tiles.Core.dll

Syntax

```
public class Number : IEquatable<Number>
```

Constructors

Number(Int32, Int32, Int32)

Creates new [Number](#)

Declaration

```
public Number(int x, int y, int z)
```

Parameters

Type	Name	Description
System.Int32 x	X	
		Should be >= 0
System.Int32 y	Y	
		Should be >= 0
System.Int32 z	Zoom	
		Should be >= 0

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Properties

X

X [Number](#) value

Declaration

```
public int X { get; }
```

Property Value

Type	Description
System.Int32	

Y

Y [Number](#) value

Declaration

```
public int Y { get; }
```

Property Value

Type	Description
System.Int32	

Z

Zoom

Declaration

```
public int Z { get; }
```

Property Value

Type	Description
System.Int32	

Methods

Add(Number)

Sum [Numbers](#)

Sums [X](#) and [Y](#) only if [Z](#)s are the same; returns null otherwise

Declaration

```
public Number Add(Number other)
```

Parameters

Type	Name	Description
Number	other	Number to add

Returns

Type	Description
Number	New Number , if Z s are the same

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

Divide(Number)

Divide [Numbers](#)

Divide [X](#) and [Y](#) only if [Z](#)s are the same; returns null otherwise

Declaration

```
public Number Divide(Number other)
```

Parameters

Type	Name	Description
Number	other	Number to divide on

Returns

Type	Description
Number	New Number , if Z s are the same

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

Equals(Number)

Declaration

```
public bool Equals(Number other)
```

Parameters

Type	Name	Description
Number	other	

Returns

Type	Description
System.Boolean	

Equals(Object)

Declaration

```
public override bool Equals(object obj)
```

Parameters

Type	Name	Description
System.Object	obj	

Returns

Type	Description
System.Boolean	

Overrides

System.Object.Equals(System.Object)

Flip()

Flips [Number](#)

Declaration

```
public Number Flip()
```

Returns

Type	Description
------	-------------

[Number](#) Converted [Number](#)

Flip(Number)

Flips [Number](#)

Declaration

```
public static Number Flip(Number number)
```

Parameters

Type	Name	Description
------	------	-------------

[Number](#) number [Number](#) to flip

Returns

Type	Description
------	-------------

[Number](#) Converted [Number](#)

Exceptions

Type	Condition
System.ArgumentNullException	

GetCount(GeoCoordinate, GeoCoordinate, Int32, Int32, Boolean, Size)

Get count of [Tiles](#) in specified region

Declaration

```
public static int GetCount(GeoCoordinate minCoordinate, GeoCoordinate maxCoordinate, int minZ, int maxZ, bool tmsCompatible, Size tileSize)
```

Parameters

Type	Name	Description
GeoCoordinate	minCoordinate	Minimal GeoCoordinate

[GeoCoordinate](#) maxCoordinate Maximal [GeoCoordinate](#)

System.Int32 minZ Minimal zoom

System.Int32 maxZ Maximal zoom

System.Boolean tmsCompatible Is tms compatible?

[Size](#) tileSize [Tile's Size](#)

Returns

Type	Description
------	-------------

System.Int32 [Tiles](#) count

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentOutOfRangeException	

GetHashCode()

Declaration

```
public override int GetHashCode()
```

Returns

Type	Description
------	-------------

System.Int32

Overrides

System.Object.GetHashCode()

GetLowerNumbers()

Gets 4 one zoom lower [Numbers](#)

Declaration

```
public Number[] GetLowerNumbers()
```

Returns

Type	Description
------	-------------

[Number](#)[] 4 lower [Numbers](#)

Exceptions

Type	Condition
System.ArgumentNullException	

GetLowerNumbers(Number)

Gets 4 one zoom lower [Numbers](#)

Declaration

```
public static Number[] GetLowerNumbers(Number number)
```

Parameters

Type	Name	Description
------	------	-------------

[Number](#) number Input [Number](#)

Returns

Type	Description
------	-------------

[Number](#)[] 4 lower [Numbers](#)

Exceptions

Type	Condition
System.ArgumentNullException	

GetLowerNumbers(Number, Int32)

Get lower [Numbers](#) for specified [Number](#) and zoom

Declaration

```
public static (Number minNumber, Number maxNumber) GetLowerNumbers(Number number, int z)
```

Parameters

Type	Name	Description
------	------	-------------

[Number](#) number Base [Number](#)

System.Int32 z

Returns

Type	Description
System.ValueTuple< Number , Number >	System.ValueTuple`2 of lower Numbers

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentOutOfRangeException	

GetLowerNumbers(Int32)

Get lower [Numbers](#) for specified [Number](#) and zoom

Declaration

```
public (Number minNumber, Number maxNumber) GetLowerNumbers(int z)
```

Parameters

Type	Name	Description
------	------	-------------

System.Int32 z

Zoom
Must be >= 10

Returns

Type	Description
------	-------------

Type	Description
System.ValueTuple< Number , Number >	System.ValueTuple`2 of lower Numbers

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentOutOfRangeException	

Multiply([Number](#))

Multiply [Numbers](#)

Multiply [X](#) and [Y](#) only if [Z](#)s are the same; returns null otherwise

Declaration

```
public Number Multiply(Number other)
```

Parameters

Type	Name	Description
Number	other	Number to multiply

Returns

Type	Description
Number	New Number , if Z s are the same

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

Subtract([Number](#))

Subtract [Numbers](#)

Subtract [X](#) and [Y](#) only if [Z](#)s are the same; returns null otherwise

Declaration

```
public Number Subtract(Number other)
```

Parameters

Type	Name	Description
Number	other	Number to subtract

Returns

Type	Description
Number	New Number , if Z s are the same

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

ToGeoCoordinates([CoordinateSystem](#), [Size](#), [Boolean](#))

Convert [Number](#) to [GeoCoordinates](#)

Declaration

```
public (GeoCoordinate minCoordinate, GeoCoordinate maxCoordinate) ToGeoCoordinates(CoordinateSystem coordinateSystem, Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
CoordinateSystem	coordinateSystem	Desired number's coordinate system
Size	tileSize	Tile's Size
System.Boolean	tmsCompatible	Is tms compatible?

Returns

Type	Description
System.ValueTuple< GeoCoordinate , GeoCoordinate >	System.ValueTuple`2 of GeoCoordinates

Exceptions

Type	Condition
System.ArgumentNullException	

ToGeoCoordinates(Number, CoordinateSystem, Size, Boolean)

Convert [Number](#) to [GeoCoordinates](#)

Declaration

```
public static (GeoCoordinate minCoordinate, GeoCoordinate maxCoordinate) ToGeoCoordinates(Number number, CoordinateSystem coordinateSystem, Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
Number	number	Number to convert
CoordinateSystem	coordinateSystem	
Size	tileSize	
System.Boolean	tmsCompatible	

Returns

Type	Description
System.ValueTuple< GeoCoordinate , GeoCoordinate >	System.ValueTuple`2 of GeoCoordinates

Exceptions

Type	Condition
System.NotSupportedException	

ToGeodeticCoordinates(Size, Boolean)

Convert [Number](#) to [GeodeticCoordinates](#)

Declaration

```
public (GeodeticCoordinate minCoordinate, GeodeticCoordinate maxCoordinate) ToGeodeticCoordinates(Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
Size	tileSize	Tile's Size
System.Boolean	tmsCompatible	Is tms compatible?

Returns

Type	Description
System.ValueTuple< GeodeticCoordinate , GeodeticCoordinate >	System.ValueTuple`2 of GeodeticCoordinates

Exceptions

Type	Condition
System.ArgumentNullException	

ToGeodeticCoordinates(Number, Size, Boolean)

Convert [Number](#) to [GeodeticCoordinates](#)

Declaration

```
public static (GeodeticCoordinate minCoordinate, GeodeticCoordinate maxCoordinate) ToGeodeticCoordinates(Number number, Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
Number	number	Number to convert
Size	tileSize	
System.Boolean	tmsCompatible	

Returns

Type	Description
System.ValueTuple< GeodeticCoordinate , GeodeticCoordinate >	System.ValueTuple`2 of GeodeticCoordinates

Exceptions

Type	Condition
System.ArgumentNullException	

ToMercatorCoordinates(Size, Boolean)

Convert [Number](#) to [MercatorCoordinates](#)

Declaration

```
public (MercatorCoordinate minCoordinate, MercatorCoordinate maxCoordinate) ToMercatorCoordinates(Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
Size	tileSize	Tile's Size

System.Boolean tmsCompatible Is tms compatible?

Returns

Type	Description
System.ValueTuple< MercatorCoordinate , MercatorCoordinate >	System.ValueTuple`2 of MercatorCoordinates

Exceptions

Type	Condition
System.ArgumentNullException	

ToMercatorCoordinates(Number, Size, Boolean)

Convert [Number](#) to [MercatorCoordinates](#)

Declaration

```
public static (MercatorCoordinate minCoordinate, MercatorCoordinate maxCoordinate) ToMercatorCoordinates(Number number, Size tileSize, bool tmsCompatible)
```

Parameters

Type	Name	Description
Number	number	Number to convert
Size	tileSize	
System.Boolean tmsCompatible		

Returns

Type	Description
System.ValueTuple< MercatorCoordinate , MercatorCoordinate >	System.ValueTuple`2 of MercatorCoordinates

Exceptions

Type	Condition
System.ArgumentNullException	

Operators

Addition(Number, Number)

Sum [Numbers](#)

Sums [X](#) and [Y](#) only if [Z](#)s are the same; returns null otherwise

Declaration

```
public static Number operator +(Number number1, Number number2)
```

Parameters

Type	Name	Description
Number	number1	Number 1
Number	number2	Number 2

Returns

Type	Description
Number	New Number , if Z s are the same

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

Division(Number, Number)

Divide [Numbers](#)

Divide [X](#) and [Y](#) only if [Z](#)s are the same; returns null otherwise

Declaration

```
public static Number operator /(Number number1, Number number2)
```

Parameters

Type	Name	Description
------	------	-------------

Type	Name	Description
------	------	-------------

Number	number1	Number 1
------------------------	---------	--------------------------

Number	number2	Number 2
------------------------	---------	--------------------------

Returns

Type	Description
------	-------------

Number	New Number , if Z s are the same
------------------------	--

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

Equality([Number](#), [Number](#))

Check two [Numbers](#) for equality

Declaration

```
public static bool operator ==(Number number1, Number number2)
```

Parameters

Type	Name	Description
------	------	-------------

Number	number1	Number 1
------------------------	---------	--------------------------

Number	number2	Number 2
------------------------	---------	--------------------------

Returns

Type	Description
System.Boolean	true if Numbers are equal; false otherwise

Inequality([Number](#), [Number](#))

Check two [Numbers](#) for non-equality

Declaration

```
public static bool operator !=(Number number1, Number number2)
```

Parameters

Type	Name	Description
------	------	-------------

Number	number1	Number 1
------------------------	---------	--------------------------

Number	number2	Number 2
------------------------	---------	--------------------------

Returns

Type	Description
System.Boolean	true if Numbers are not equal; false otherwise

Multiply([Number](#), [Number](#))

Multiply [Numbers](#)

Multiply [X](#) and [Y](#) only if [Z](#)s are the same; returns null otherwise

Declaration

```
public static Number operator *(Number number1, Number number2)
```

Parameters

Type	Name	Description
------	------	-------------

Number	number1	Number 1
------------------------	---------	--------------------------

Number	number2	Number 2
------------------------	---------	--------------------------

Returns

Type	Description
------	-------------

Number	New Number , if Z s are the same
------------------------	--

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

Subtraction(Number, Number)

Subtract [Numbers](#)

Subtract [X](#) and [Y](#) only if [Z](#)s are the same; returns null otherwise

Declaration

```
public static Number operator -(Number number1, Number number2)
```

Parameters

Type	Name	Description
Number	number1	Number 1
Number	number2	Number 2

Returns

Type	Description
Number	New Number , if Z s are the same

Exceptions

Type	Condition
System.ArgumentNullException	
System.ArgumentException	

Implements

System.IEquatable<T>

Class RasterTile

[Raster Tile](#)

Inheritance

System.Object
[Tile](#)
RasterTile

Implements

[ITile](#)
System.IDisposable
System.IAsyncDisposable

Inherited Members

[Tile.DefaultSize](#)
[Tile.IsDisposed](#)
[Tile.MinCoordinate](#)
[Tile.MaxCoordinate](#)
[Tile.Number](#)
[Tile.Bytes](#)
[Tile.Size](#)
[Tile.Path](#)
[Tile.Extension](#)
[Tile.TmsCompatible](#)
[Tile.MinimalBytesCount](#)
[Tile.Dispose\(\)](#)
[Tile.Dispose\(Boolean\)](#)
[Tile.DisposeAsync\(\)](#)
[Tile.Validate\(Boolean\)](#)
[Tile.Validate\(ITile, Boolean\)](#)
[Tile.CalculatePosition\(\)](#)
[Tile.CalculatePosition\(Number, Boolean\)](#)
[Tile.GetExtensionString\(\)](#)
[Tile.GetExtensionString\(TileExtension\)](#)
[Tile.WriteToFile\(String\)](#)
[Tile.WriteToFile\(Tile, String\)](#)
System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GTile2Tiles.Core.Tiles](#)

Assembly: GTile2Tiles.Core.dll

Syntax

```
public class RasterTile : Tile, ITile, IDisposable, IAsyncDisposable
```

Constructors

RasterTile(GeoCoordinate, GeoCoordinate, Int32, Size, IEnumerable<Byte>, TileExtension, Boolean, Int32, Interpolation)

Declaration

```
public RasterTile(GeoCoordinate minCoordinate, GeoCoordinate maxCoordinate, int zoom, Size size = null, IEnumerable<byte> bytes = null, TileExtension extension = TileExtension.Png,
```

Parameters

Type	Name	Description
GeoCoordinate	minCoordinate	
GeoCoordinate	maxCoordinate	
System.Int32	zoom	
Size	size	
System.Collections.Generic.IEnumerable<System.Byte>	bytes	
TileExtension	extension	
System.Boolean	tmsCompatible	
		BandsCount
System.Int32	bandsCount	Must be in range (0, 4]; DefaultBandsCount by default
		Interpolation
Interpolation	interpolation	Lanczos3 by default

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

RasterTile(Number, CoordinateSystem, Size, IEnumerable<Byte>, TileExtension, Boolean, Int32, Interpolation)

Declaration

```
public RasterTile(Number number, CoordinateSystem coordinateSystem, Size size = null, IEnumerable<byte> bytes = null, TileExtension extension = TileExtension.Png, bool tmsCompatil
```

Parameters

Type	Name	Description
Number	number	

Type	Name	Description
CoordinateSystem	coordinateSystem	
Size	size	
System.Collections.Generic.IEnumerable<System.Byte>	bytes	
TileExtension	extension	
System.Boolean	tnsCompatible	
		BandsCount
System.Int32	bandsCount	Must be in range (0, 4]; DefaultBandsCount by default
		Interpolation
Interpolation	interpolation	Lanczos3 by default

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Fields

DefaultBandsCount

Default count of bands

Declaration

```
public const int DefaultBandsCount = 4
```

Field Value

Type	Description
System.Int32	

Properties

BandsCount

Count of bands in [RasterTile](#)

Declaration

```
public int BandsCount { get; }
```

Property Value

Type	Description
System.Int32	

Interpolation

Interpolation of this [RasterTile](#)

Declaration

```
public Interpolation Interpolation { get; }
```

Property Value

Type	Description
Interpolation	

Implements

[ITile](#)
System.IDisposable
System.IAsyncDisposable

Class Tile

Basic implementation of [ITile](#) interface

Inheritance

System.Object
Tile
[RasterTile](#)

Implements

[ITile](#)
System.IDisposable
System.IAsyncDisposable

Inherited Members

System.Object.Equals(System.Object)
System.Object.Equals(System.Object, System.Object)
System.Object.GetHashCode()
System.Object.GetType()
System.Object.MemberwiseClone()
System.Object.ReferenceEquals(System.Object, System.Object)
System.Object.ToString()

Namespace: [GHI02.Tiles.Core.Tiles](#)

Assembly: GHI02.Tiles.Core.dll

Syntax

```
public class Tile : ITile, IDisposable, IAsyncDisposable
```

Constructors

Tile(GeoCoordinate, GeoCoordinate, Int32, Size, IEnumerable<Byte>, TileExtension, Boolean)

Creates new [Tile](#) from [GeoCoordinate](#) values

Declaration

```
protected Tile(GeoCoordinate minCoordinate, GeoCoordinate maxCoordinate, int zoom, Size size = null, IEnumerable<byte> bytes = null, TileExtension extension = TileExtension.Png, bool tmsCompatible = false)
```

Parameters

Type	Name	Description
GeoCoordinate	minCoordinate	Minimal GeoCoordinate
GeoCoordinate	maxCoordinate	Maximal GeoCoordinate
System.Int32	zoom	Zoom
Size	size	Size ; should be a square, e.g. 256x256; If set to null, uses DefaultSize as value
System.Collections.Generic.IEnumerable<System.Byte> bytes	bytes	Bytes
TileExtension	extension	Extension
System.Boolean	tmsCompatible	Is tms compatible?

Exceptions

Type	Condition
System.ArgumentException	

Tile(Number, CoordinateSystem, Size, IEnumerable<Byte>, TileExtension, Boolean)

Creates new [Tile](#)

Declaration

```
protected Tile(Number number, CoordinateSystem coordinateSystem, Size size = null, IEnumerable<byte> bytes = null, TileExtension extension = TileExtension.Png, bool tmsCompatible = false)
```

Parameters

Type	Name	Description
Number	number	Number
CoordinateSystem	coordinateSystem	Desired coordinate system
Size	size	Size ; should be a square, e.g. 256x256; If set to null, uses DefaultSize as value
System.Collections.Generic.IEnumerable<System.Byte> bytes	bytes	Bytes
TileExtension	extension	Extension
System.Boolean	tmsCompatible	Is tms compatible?

Exceptions

Type	Condition
System.ArgumentException	

Fields

DefaultSize

Default [Tile's Size](#)

Uses Gtiff2Tiles.Core.Tiles.Tile.DefaultSideSizeValue as values for width and height

Declaration

```
public static readonly Size DefaultSize
```

Field Value

Type Description

[Size](#)

Properties

Bytes

Collection of [ITile](#)'s bytes

Declaration

```
public IEnumerable<byte> Bytes { get; set; }
```

Property Value

Type	Description
System.Collections.Generic.IEnumerable<System.Byte>	

Extension

Extension of [ITile](#)

Declaration

```
public TileExtension Extension { get; }
```

Property Value

Type	Description
TileExtension	

IsDisposed

Shows if this [ITile](#)'s already disposed

Declaration

```
public bool IsDisposed { get; }
```

Property Value

Type	Description
System.Boolean	

MaxCoordinate

Maximal [GeoCoordinate](#) of this [ITile](#)

Declaration

```
public GeoCoordinate MaxCoordinate { get; }
```

Property Value

Type	Description
GeoCoordinate	

MinCoordinate

Minimal [GeoCoordinate](#) of this [ITile](#)

Declaration

```
public GeoCoordinate MinCoordinate { get; }
```

Property Value

Type	Description
GeoCoordinate	

MinimalBytesCount

355 by default

Declaration

```
public int MinimalBytesCount { get; set; }
```

Property Value

Type	Description
System.Int32	

Number

[Number](#) of this [ITile](#)

Declaration

```
public Number Number { get; }
```

Property Value

Type	Description
Number	

Path

Path on disk of this [ITile](#)

Declaration

```
public string Path { get; set; }
```

Property Value

Type	Description
System.String	

Size

[Size](#) (width and height) of this [ITile](#)

Declaration

```
public Size Size { get; }
```

Property Value

Type	Description
Size	

TmsCompatible

Is [ITile](#) tms compatible?

Declaration

```
public bool TmsCompatible { get; }
```

Property Value

Type	Description
System.Boolean	

Methods

CalculatePosition()

Calculates this [ITile](#)'s position in upper [ITile](#)

Declaration

```
public int CalculatePosition()
```

Returns

Type	Description
	Value in range from 0 to 3
System.Int32	Starts always from upper-left corner and goes to lower-right, but maths depends on TmsCompatible value

CalculatePosition(Number, Boolean)

Calculates this [ITile](#)'s position in upper [ITile](#)

Declaration

```
public static int CalculatePosition(Number number, bool tmsCompatible)
```

Parameters

Type	Name	Description
Number	number	Number of Tile
System.Boolean	tmsCompatible	Is tms compatible?

Returns

Type	Description
	Value in range from 0 to 3
System.Int32	Starts always from upper-left corner and goes to lower-right, but maths depends on TmsCompatible value

Exceptions

Type	Condition
System.ArgumentNullException	

Dispose()

Declaration

```
public void Dispose()
```

Dispose(Boolean)

Declaration

```
protected virtual void Dispose(bool disposing)
```

Parameters

Type	Name	Description
System.Boolean	disposing	Dispose static fields?

DisposeAsync()

Declaration

```
public ValueTask DisposeAsync()
```

Returns

Type	Description
System.Threading.Tasks.ValueTask	

Finalize()

Calls [Dispose\(Boolean\)](#) on this [Tile](#)

Declaration

```
protected void Finalize()
```

GetExtensionString()

Get System.String from [TileExtension](#)

Declaration

```
public string GetExtensionString()
```

Returns

Type	Description
System.String	Converted System.String

GetExtensionString(TileExtension)

Get System.String from [TileExtension](#)

Declaration

```
public static string GetExtensionString(TileExtension extension)
```

Parameters

Type	Name	Description
TileExtension	extension	TileExtension to convert

Returns

Type	Description
System.String	Converted System.String

Exceptions

Type	Condition
System.ArgumentOutOfRangeException	

Validate(ITile, Boolean)

Checks if this [ITile](#) is not empty or too small
See [MinimalBytesCount](#) property for more info

Declaration

```
public static bool Validate(ITile tile, bool isCheckPath)
```

Parameters

Type	Name	Description
ITile	tile	Tile to check
System.Boolean	isCheckPath	

Returns

Type	Description
System.Boolean	true if ITile 's valid; false otherwise

Validate(Boolean)

Checks if this [ITile](#) is not empty or too small

See [MinimalBytesCount](#) property for more info

Declaration

```
public bool Validate(bool isCheckPath)
```

Parameters

Type	Name	Description
System.Boolean	isCheckPath	Do you want to check Path ?

Returns

Type	Description
System.Boolean	true if ITile 's valid; false otherwise

WriteToFile(ITile, String)

Declaration

```
public static void WriteToFile(ITile tile, string path = null)
```

Parameters

Type	Name	Description
ITile	tile	ITile to write
System.String	path	

Exceptions

Type	Condition
System.ArgumentNullException	

WriteToFile(String)

Writes [ITile](#)'s [Bytes](#) to file

Declaration

```
public void WriteToFile(string path = null)
```

Parameters

Type	Name	Description
System.String	path	Full path to write ITile if not set, Path property will be used instead

Exceptions

Type	Condition
System.ArgumentNullException	

Implements

[ITile](#)
System.IDisposable
System.IAsyncDisposable